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MAY 5, 1949

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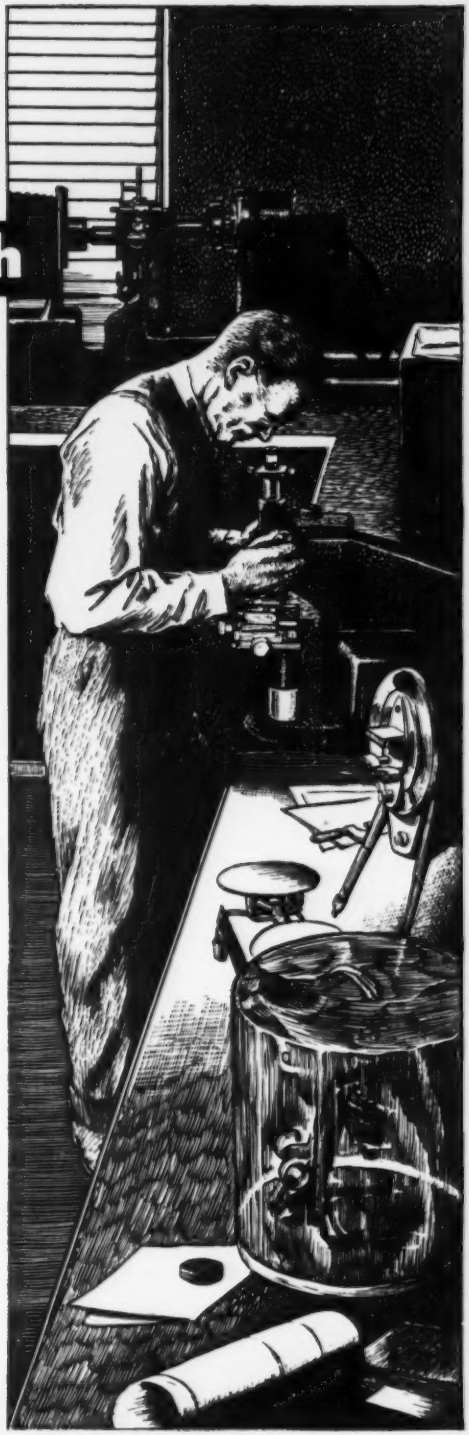

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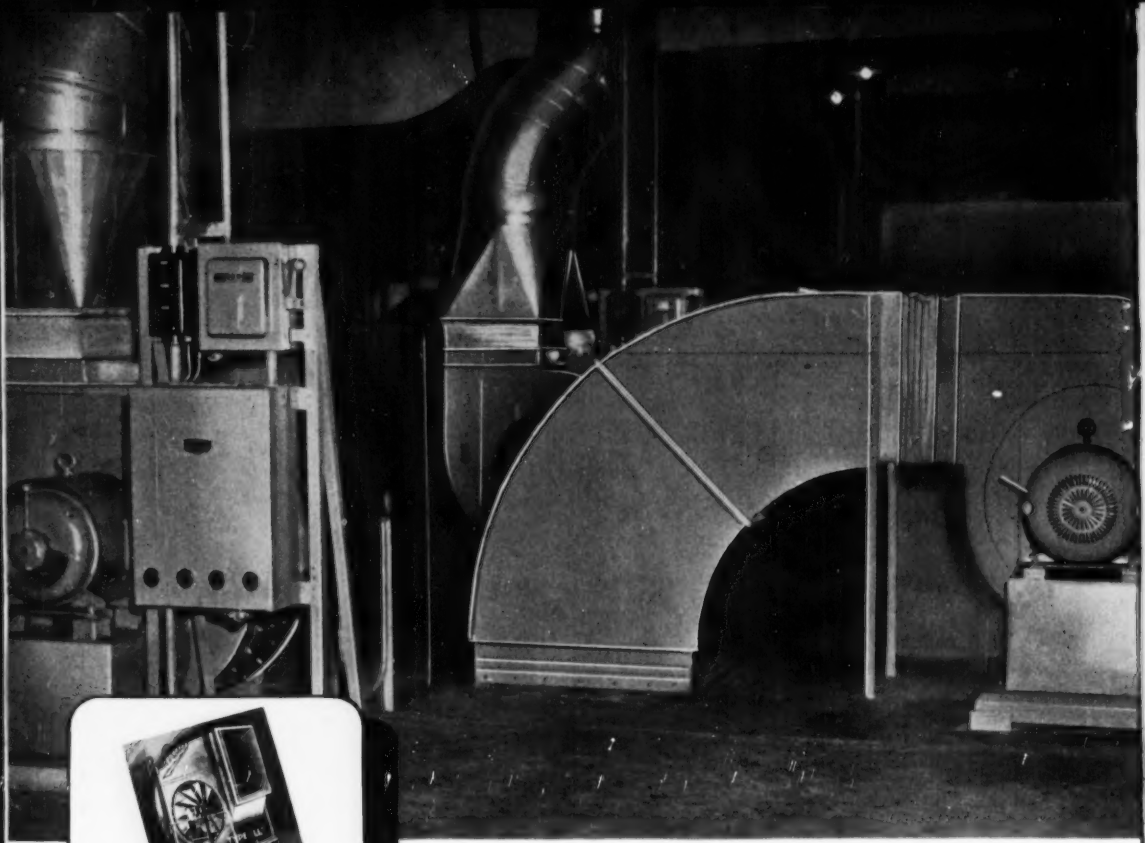

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MEMBER

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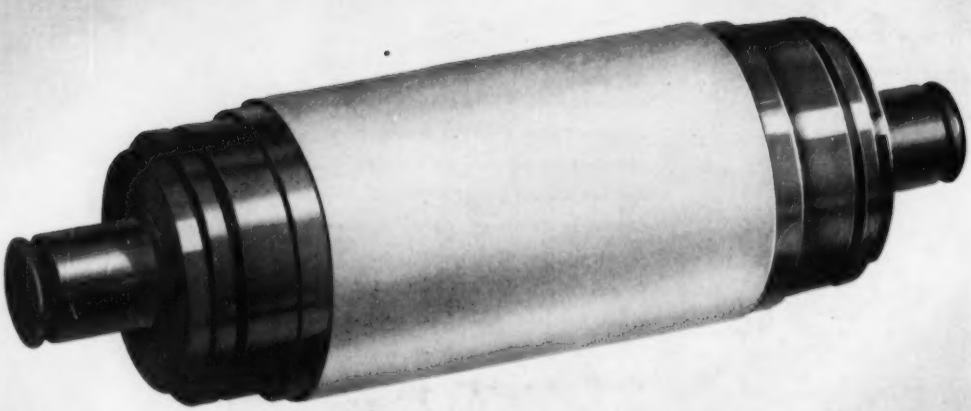

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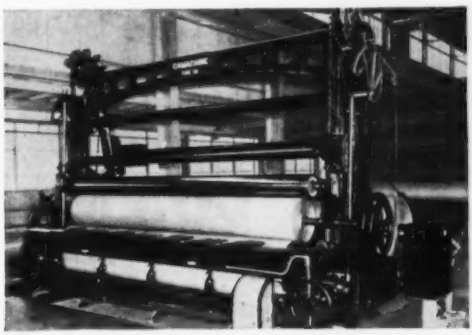

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VOL. 128, NO. 18

Preparatory World Pulp Conference

Exploring Problems, Broadening Understanding

MONTREAL — Substantial progress, with free and frank discussion of all problems involved, was reported on April 26 by R. M. Fowler, president of the Canadian Pulp & Paper Ass'n. and chairman of the preparatory conference on World Pulp Problems, which held closed sessions in the Windsor Hotel on that day.

Delegates from more than a score of interested nations began meetings on April 25, as reported in the April 28 issue of *Paper Trade Journal*, when the first plenary session was concluded on the note that a committee be named to work over the April 30-May 1 week-end on a draft report which might be accepted by the final plenary session the week of May 2.

National statements from many of the 62 delegates and observers were presented at the April 26 closed morning session which pictured the pulp situation in their respective countries and some of their specific problems. Following the meeting Mr. Fowler told a reporter:

"The statements we heard this morning were most valuable, and went so far as to give descriptions in various countries of situations which up to now were not available."

"The calibre of the delegates was reflected in the very high quality of the statements made," Dr. Egon Glesinger, secretary of the conference, observed.

The conference got down quickly to specific discussions of technical matters, Dr. Glesinger went on. "We have had perfectly frank and full discussions in which every delegate has made a contribution. The atmosphere is a cordial one."

At the plenary meeting on April 27, it was asserted by the United Nations Educational, Scientific and Cultural Organization that there is a serious newsprint shortage in the world which threatens to grow worse in coming years unless energetic steps are taken to speed expansion of production.

An insufficient supply of newsprint and paper is a menace to the independence of the press, social progress and international understanding, the statement stressed. It was delivered, in French and English, by M. P. Desjardins, UNESCO's observer at the conference.

The newsprint demand for 1949 has been estimated at about 8,200,000 tons. World consumption today slightly exceeds 7,500,000 tons, slightly higher than the average for the four years before the war. In view of the estimated production, the margin left will be small, the statement said.

"Even if governments abolished the restrictions on the import of pulp, coal or paper called for by the present exchange position, and we suddenly reverted to a universal system of free trade, demand would probably not greatly exceed 9,500,000 tons," the statement continued. "That is a target by no means unattainable if it is borne in mind that there is unused productive capacity amounting to nearly 1,400,000 tons.

"But what do the figures mean? Merely that those are the amounts of newsprint which governments or the press think could be bought and consumed commercially. They do not mean that those are the amounts which peoples should consume to be properly informed. Yet that is the real standard.

"To assess correctly, in terms of humanity, how far production is adequate, its relation to demand is not enough. Demand is a market phenomenon which very imperfectly reflects the real desires of the community and still more imperfectly reflects its objective needs.

"Today, more than ever before, there are too many factors keeping demand to a minimum below the real requirements of social and international progress, factors such as financial restrictions, politics, lack of resources and technical ignorance."

Even in industrialized countries with a low percentage of illiterates the press did not everywhere enjoy adequate supplies. In the United Kingdom, France, the Netherlands and Italy, a number of factors had reduced consumption to "a glaringly inadequate level," although their productive capacity was more than adequate to meet their needs. Even the United States and Canada, whose joint consumption was more than 5,000,000 tons, or two-thirds of the world's total, expected to need a million tons more in the coming years.

"What then of the vast continents of South America, Asia and Africa containing 67 percent of the world's population, but consuming barely 11 percent of the world's newsprint? Their populations are increasing rapidly."

The statement did not make any request of the conference, but suggested that production should be raised to capacity, that wherever possible pulp substitutes be employed in paper manufacture, that new plants be built, and that governments be asked to consider raising the percentage of timber production set aside for paper making.

Commenting on unequal distribution of available supplies of newsprint, the statement said:

"In the case of the principal producers, distribution is still governed by the commercial commitments in force before the war and little account is taken of the new needs arising.

Before the war, distribution was almost exclusively to industrialized countries, and this has been aggravated in the post war years by the unequal purchasing power of currencies.

This has resulted in certain countries exporting a proportion of their output while their own domestic market is inadequately provided for."

Canadian technical advisers and observers attending the conference included: Dr. Allon Peebles, T. A. McElhanney and R. G. Ray of the Department of Mines and Resources; G. H. Rochester and W. N. Murphy of the Department of Trade and Com-

(Continued on page 60)

Hoosac Flood Control Hopes Dashed

North Adams, Mass. — President Truman on April 27 dealt a death blow to the hopes of North Adams paper manufacturers that work would be begun this year on the Hoosac River flood control project.

The President informed Mayor James A. Bowes in a letter that because of the "tight budgetary situation", he finds it impossible to recommend to Congress at this time funds for starting the project.

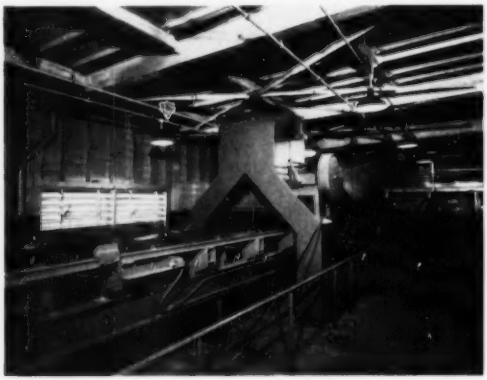
This means that to all intents and purposes, the project is killed for a year at least, unless the House and Senate vote by floor amendments to attach a rider providing money for the project in the annual appropriation bill. In view of the President's decision, however, this is regarded as a very remote possibility.

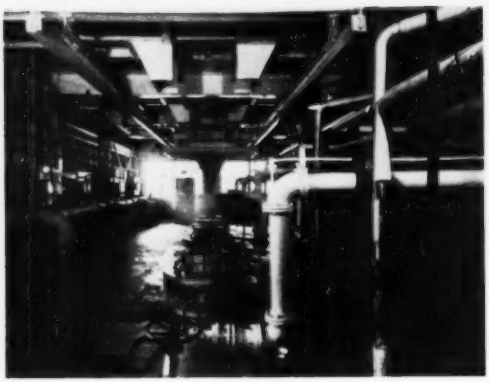
In his letter to Mayor Bowes, President Truman said he has carefully reviewed the recommendations of the Army Engineers with respect to flood control measures on the Hoosac River. While "the needs of the Hoosac River basin area are recognized," Truman said, inclusion of funds in the budget at this time "would raise similar questions with respect to many other worthwhile projects which also have been deferred this year."

President Truman said that in preparing the 1950 budget which becomes effective July 1, new starts for all public works were held to a minimum. As a result, he went on, "only two new starts for flood control were judged to meet the rigid criteria that the national interest required their inclusion in the budget."

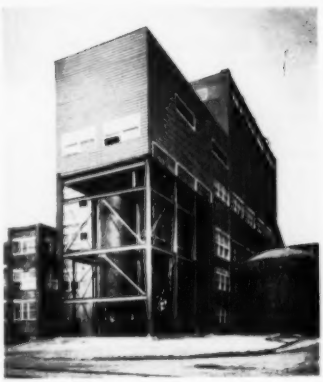
The Army's latest estimate of the cost of the flood control work it recommends in North Adams and Adams is $20,000,000, but what was asked at this time was a $1,300,000 starting appropriation. It would have enabled the Army's Corps of Engineers to develop its basic plans into working drawings and specifications and would have provided enough besides for a start of actual work a year hence.

The 1950 fiscal year rivers and har-





Top, left: Partially erected steel work for Crossett Paper Mills new machine room which will house the 210" Fourdrinier for the manufacture of lightweight kraft.
Top, right: Interior of extension to C.P.M.'s digester building chip belt conveyor and tripper for charging digesters.
Right: Another view showing the charging floor of the recently completed extension.
Left: Exterior view of digester extension which houses the three new digesters—



Crossett Expansion Progress

Crossett, Ark. — Crossett Paper Mills expansion program is proceeding at an accelerated rate. The extension to the digester building, housing the three new digesters which have been in operation since November, has had all exterior finishing completed and the scaffolding removed. Steelwork for the new machine room is going up rapidly. This important phase of the long-range expansion will be completed in time for Crossett's new 210" Fourdrinier paper making machine to be installed and in operation by the early part of 1950.

bors appropriation bill to which the Northern Berkshire leaders had asked to have that amount added was drafted last September, and contained no provision for the project because at that time the Army Engineers who surveyed the Hoosac after the 1927, 1936 and 1938 floods were on record that the cost would exceed the benefits.

After the flood last Dec. 31, Senators Leverett Saltonstall and Henry Cabot Lodge, and Representative John W. Heselton got the Army to make a resurvey as a result of which it reversed its previous conclusions and held the project economically justified, although its cost estimates had gone up to $20,000,000.

During the year-end floods, paper mills were among the heavy sufferers, with losses running close to a million dollars. The mills joined in the petition for federal action to prevent further damage.

Trees for Farmers Seedlings Given, Free

PORT EDWARDS, Wis.—The forestry division of the Nekoosa-Edwards Paper Co., is placing 130,000 free Norway and Jack Pine seedling pines at the disposal of farmers and others interested in planting areas of land not suitable for other crops.

In addition the company is offering the use of Nekoosa-Edwards' mechanical tree planting equipment to those ordering in excess of 2,000 trees. The Nekoosa staff of trained foresters stands ready to offer advice and help on a no cost basis to those who receive free trees.

Open Contract Parley

PORTLAND, Ore. — Pacific Coast pulp and paper manufacturers opened their annual contract negotiations April 25 with the Pulp, Sulphite and Paper Mill Workers Union and the Paper Makers Union. It is estimated these two unions, both AFL, represent approximately 16,000 workers in California, Oregon and Washington. Details of contract proposals under discussion have not been disclosed.

Forestry Scholarships

MERRILL, Wis. — Three of the winners of the Trees for Tomorrow $2,500 forestry scholarship have been selected by district committees who have interviewed their contestants. Announcement and presentation of the awards will be made at the graduation exercises at the different high schools. The northern counties are divided into five districts for five scholarships at $500 each.

CCB Outing

BOSTON—The Carton Credit Bureau of Boston will hold an outing for its members and their staffs, other especially invited paper box makers and representatives of the supply houses at the Commonwealth Country Club, Chestnut Hill, Newton, Mass., on June 27. Luncheon will be served at 12 o'clock. Golf and other sports will be in the afternoon, with dinner in the evening.

Hudson River Div. TAPPI

GLENS FALLS, N.Y.—Charles N. Hager of the BFD division of the Diamond Match Co., Plattsburgh, N.Y., was elected chairman of the Hudson River Division, Empire State Section, TAPPI, at a meeting April 21, at the Village Inn in South Glens Falls. He succeeds Raymond H. Wiles of the research division of the International Paper Co., who presided.

Robert Moynihan of Finch, Pruyn & Co., Inc., of Glens Falls, was named vice-chairman; William McPherson of the research division of the International Paper Co., South Glens Falls, secretary; Hugh Lavery of International, Palmer Falls, publicity chairman; and Earl F. Anderton of the Marinette Paper Co., Fort Edward, chairman of dinners and arrangements.

"Corrosion" was the topic of the program, which included talks by five experts. R. T. Barnes, Jr., of the International Nickel Co., New York, discussing "Nickel Base Alloys," said the most common of these used in paper mills is monel metal which he termed highly desirable in the kraft and soda mills and all parts around fourdrenier paper machinery, stock lines, table rolls and similar uses.

R. S. Burr of the American Brass Company, Waterbury, Conn., in a talk on "Copper Base Alloy," mentioned the use of copper piping which is more than 99 percent pure for many places in the paper mill; red brass containing 85 percent copper was recommended for pipe lines to prevent dezincification, and bronzes with five to ten percent of tin where additional hardness and spring qualities are needed.

"Stainless Steel" was discussed by R. C. Cunningham of Industrial Steels, Inc., of Cambridge, Mass. He described chrome-nickel alloys which combine a high strength-weight ratio with good qualities for abrasive and corrosive conditions. He mentioned a new 17-4 ph. alloy which is machinable and can be hardened in an atmosphere furnace at low temperatures of approximately 900 degrees Fahrenheit for additional hardness.

In the discussion period, Mr. Cunningham pointed out that in the welding of stainless steel a carbide precipitation is formed which tends to destroy stainless properties. This defect can be corrected by stainless steels with a lower carbon content and by the addition of certain stabilizers such as titanium and columbium, he said.

Chester Jackett of the Lithgow Corp., Norwalk, Conn., spoke on Lithcote coatings. He explained that they consist of phenol-formaldehyde resins in a solvent which provides a uniform compound when it is sprayed on a freshly sand or grit blasting metallic surface. Multiple coats of this resin are applied on the surface and the back at high temperatures to form a fused hard, dense and glossy surface which has high resistance to both chemicals and abrasion. The slippery surface of this Lithcote prevents slime formation and greatly reduces surface friction, he said.

"Rubber Base Plastics" were described by Robert Pierce of the Pennsylvania Salt Mfg. Co., Philadelphia, Pa. He described the good results his company, manufacturer of caustic soda, chlorine and related products, has obtained through the use of special chlorinated acid cements.

Following the formal addresses, mill representatives presented specific corrosion problems they were experiencing in their own mills. They included Charles Wright of the Stevens & Thompson Paper Co., Greenwich, N.Y.; Robert E. March, Marinette Paper Co., Fort Edward; and D. B. Westcott of the West Virginia Pulp & Paper Co., Mechanicville, N.Y.

A tour of the Sandy Hill Iron & Brass Works at Hudson Falls was made by the TAPPI members before the meeting.

The next meeting will be held May 20, at Plattsburg, with mill visits scheduled May 21, at the Imperial and BFD plants at Plattsburg; J. and J. Rogers, Ausable Forks and West Virginia Pulp & Paper Co., Willsboro.

The June meeting will be a state-wide session of the entire section at Hotel Sagamore, Bolton Landing, N.Y., June 2-4. Foster P. Doane of Sandy Hill, will be general chairman.

Supts. Materials Handling

NEW YORK—An unusual program for a general meeting on materials handling has been planned for presentation at the 1949 convention of The American Pulp & Paper Mill Supt's Ass'n., Inc., June 15-17. Matthew W. Potts, materials handling consultant, is to be the moderator of the session and Charles H. Reese, Nekoosa-Edwards Paper Co., chairman.

Bjorge Succeeds Corlett

MERRILL, Wisconsin—Wilson Bjorge has joined Trees for Tomorrow Inc., as forester and manager of the Trees for Tomorrow Camp at Eagle River, succeeding W. S. Corlett, resigned.

Avg. Weekly Earnings

WASHINGTON—Average weekly earnings in paper and allied products manufactures fell to $54.32 in March from $55.23 in February, the Bureau of Labor Statistics reports. Factory earnings for industries in general fell $1 per week, the Bureau said.

Canadian Industry Earnings Evaluations

TORONTO, Ont.—The first quarter of 1949 has definitely changed the picture in the pulp and paper industry in Canada. Net profits of newsprint manufacturers are beginning to show decreases, pulp prices have been slipping and scrap paper dealers are loaded to complete capacity and, in many cases, have almost ceased operations.

One of the weakest groups of stocks in the current colorless stock market here has been pulp and paper securities. The pulp and paper index has drifted steadily downwards for more than a week. The reason given is that the first quarted results now being published, show a reversal of trend. Minnesota & Ontario Paper Co's sales reported down 16.9%; its net profits down 41.3%. Lake St. John Power & Paper Co's net profit off 40%. Brompton Pulp & Paper Co., down 28.5%. Abitibi Power & Paper Co. and Great Lakes Paper Co., have stated that their sales and net profit are down, although actual figures are not given. The only company to report an increase in St. Lawrence Paper Mills Co., whose net is up 24.7%. The better showing is said to be due to higher sales of newsprint.

Canadian pulp men are inclined to view the lower pulp prices as the wiping out of the premium which they have been getting as a result of the postwar shortage and feel that they can hold their own in a competitive market against overseas pulp.

Going back to the newsprint question, sales are said to be holding up well without any price changes. Newsprint dollar sales for at least two companies are ahead of last year, the drop in earnings being entirely due to lower sales of sulphite pulp. It is understood that the same factors operated generally in the industry. It would, therefore, appear that those companies depending on large pulp sales will be harder hit than those whose pulp sales are merely incidental to other operations.

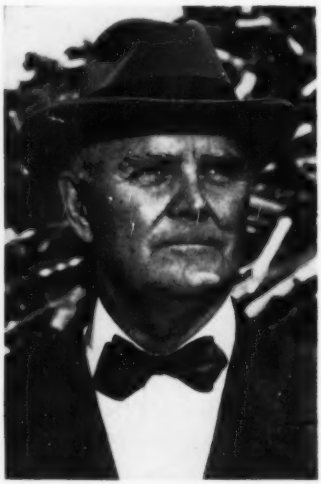
It is pointed out that pulp and paper stocks have been selling at very reasonable ratio earnings and could afford to drop substantially before affecting what is generally considered a fair price. For instance, Abitibi Power & Paper Co., paid $5.79 a common share in 1948 and would still earn $2.00 a common share if the earnings were cut in half for 1949, which is more than the first quarter figures indicate, although Abitibi showed a greater drop than any pulp and paper company so far reporting first quarter earnings for 1949. In the same way, Consolidated would earn $2.29 instead of $4.58; Great Lakes Paper would earn $1.57 instead of $4.06; and Minnesota & Ontario Paper Co. $2.32 against $4.64. Abitibi is selling about $18¼ or nine times the $2.00 figure; Consolidated at $17⅜ or 7.6 times $2.29; Great Lakes at $14¼ or 9.1 times $1.57 and Minnesota & Ontario at $16⅛ or 6.9 times $2.32. It will thus be seen that the ratios would still be satisfactory.

As an indication of the complicated effects of the current monetary difficulties, today's position of the waste paper market is a good example.

Three or four months ago waste paper dealers were offering $13 to $15 a ton for newsprint and $8 to $10 a ton for mixed papers. Today they don't want it at any price.

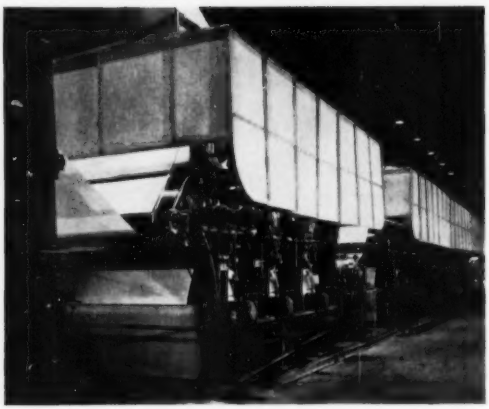
An inventory chain reaction throughout the industry has switched the warbred scarcity to an oversupply all along the line. Manufacturers of cardboard shipping containers encountered sales resistance early in the year and inventories began piling up. Officials of large producing mills agree that everyone is in the same boat, from the scrap paper collector to the manufacturer of products for export. Some mills have literally "acres" of scrap paper and some have been running on a five-day week instead of six.

Canada increased her industrial production capacity by 300% or more during the last ten years, much of it based on the hope of an expanding export market. The exchange problem has dashed this hope, temporarily, at least. Business is still humming along, carried forward by the momentum of the



CHAMPION EXPANSION

Important expansion of the capacity for making fine papers by the Houston Division of the Champion Paper and Fibre Co., with the addition of a multi-million dollar plant to serve the southwest area is announced by Reuben B. Robertson, (right) president of the company. The recently completed plant is in Pasadena, Tex., just east of Houston, adjacent to the company's mill which for ten years has manufactured highly bleached white pulp by the sulphate process from the forests of east Texas. . . It will be the first in the southwest equipped for complete conversion of the raw material of the forest into fine white paper, ready for the printer and converter. . . "Ten years in the Lone Star State have given us unbounded optimism for Texas," Mr. Robertson said. "Furthermore, our engineers determined that in Texas alone could be found adequate water and wood supply, intelligent workers in sufficient numbers and easy access to markets." President Robertson recently presided at ceremonies attending the starting of operations of the new equipment shown above—capable of large-scale production of various types of high grade papers.



One of the fourdrinier paper machines equipped for the Champion process of machine coating. Coater shown at break in driers (right side of picture).

great upsurge of activities in the first post-war years. Almost every industry, however, will be profoundly affected by the loss of export markets, including the pulp and paper and allied industries.

Business thinking and planning are more or less static at the moment because of the political situation. Some of the tension was eased this week by the definite assurance of Prime Minister Louis St. Laurent that there would be a general election in June. The Liberals have a comfortable majority in the house as it stands and will make a bid for continuance on the strength of their record and advanced social legislation. The Conservatives, under their new leader, former premier of Ontario, George Drew, are not overlooking the vote-getting possibilities of social legislation, either. Whatever other results may flow from the election, it would appear that there will be more and better baby bonuses, higher pensions for more people and lower taxes for a greater number. What all that will do to the average businessman, keeping in mind the export situation, remains to be seen.

Log Handling Research

OTTAWA — With the coming of spring, the problem of handling logs in the rivers again assumes considerable importance in Canada and the National Research Council reports it has undertaken study of the movement of logs in storage dams supplying power plants.

The Council is investigating the problem with the aid of hydraulic models which enable tests to be conducted under controlled conditions at a small fraction of the cost of full scale trials. A 1:100 scale model of power plant which is typical of a number of plants in having the entrances to the power canal and log chute adjacent to each other at one end of the control dam, has been constructed and tests are in progress in the hydraulics laboratory. Miniature logs are handled in the model in a similar manner to the large logs at the power stie and the same difficulties are experienced in preventing water-soaked logs from passing beneath the guard booms.

A number of tests have been conducted to study the effect of the position of the entrance to the log chute relative to the entrance to he power canal. In designing new power plans, provision must be made for handling logs in the early design stages and information on the relative merits of different locations of the log chute is of great value.

A number of guard boms have been tested at different depths of immersion. Increasing the immersed area is beneficial but beyond a certain depth the downward current induced by the boom has a harmful effect experiment showed. A guard boom with a submerged sloping screen has been found to have certain advantages and tests are in progress on a larger model to determine the best size of screen, slope and immersion to give adequate protection consistent with economy of construction and ease in handling.

Discuss N. Z. Paper Industry Plans

PITTSBURGH—The Dominion of New Zealand is going ahead with plans for the establishment of a pulp and paper industry, Clarence F. Skinner, Minister of Lands and Rehabilitation, said while on a visit to the Rust Engineering Co., here, on April 21.

Accompanying Mr. Skinner during two days of consultation with Rust executives were A. R. Entrican, New Zealand Director of Forestry, and S. J. Robinson, managing director of B. J. Ball (N.Z.) Ltd., paper importer.

The scope and type of the projected paper-making facilities which are expected to have far-reaching effects on the economy of New Zealand, were subjects of the conference. The discussion centered around technical and economic details of a comprehensive report on the suggested paper mill program recently submitted after a survey by Rust.

Mr. Skinner, who is also a member of the New Zealand Parliament, said his Government is contemplating an overall program for utilization of its forests which may cost in the neighborhood of $100,000,000. The project, besides the paper mill, involves improvement of port facilities at Tauranga harbor on the North Island, some 40 miles of rail line to Murupara, 70 miles of power line, and building of a new town to serve the paper making operations.

The Dominion at present annually requires 27,000 to 30,000 tons of newsprint as well as other paper requirements. The new program would enable it to capitalize on its extensive pulp timber resources, similar to

The Hon. Clarence F. Skinner, M.P. (left), New Zealand's Minister of Lands and Rehabilitation, meets in Pittsburgh with S. M. Rust, Jr., (right) president of the Rust Engineering Co., to discuss the Dominion's proposed paper industry development.

American southern pine, which were planted as part of a forestry rehabilitation program. Some 900,000 acres of this timber, planted since 1920, are now available.

The proposed paper mill, it is contemplated, would use a 234", three-roll paper machine, with a maximum newsprint potential of about 60,000 tons of newsprint per year. However, present plans envisage production of about 50,000 tons of newsprint annually, with additional production of writing paper, groundwood and bleached sulphate pulp.

Paper Ass'n of N. Y.

NEW YORK—New officers of the Paper Ass'n., of New York City, elected at the annual meeting of that group on April 28 are as follows:

President, George F. Gray of Henry Lindenmeyr & Sons; vice-president (fine paper division), Charles E. Canfield of the Canfield Paper Co.; vice-president (wrapping paper division), John T. Dillon of George W. Miller & Co.; treasurer, L. Alan Henriques of the Miller & Wright Paper Co.; and secretary, Irwin Slote, 41 Park Row.

Directors were elected as follows: *Fine paper division*—A. A. Lotker of the Majestic Paper Corp.; J. Cliff Marvin of Bulkley, Dunton & Co., Inc.; Charles H. Ris of the Ris Paper Co.; Paul K. Roth of the H. P. Andrews Paper Co.; Fred Schlosser of the Schlosser Paper Corp., and Frank M. Van Horne of the John F. Sarle Co. *Wrapping paper division*—Charles F. Coy of Coy, Disbrow & Co.; Jack Glekel of the Eagle Paper & Twine Co.; Gustave C. Indruk of the Tappen & Indruk Co.; Bernard B. Novasel of the Lachman-Novasel Paper Co.; Joseph H. Simon of the Ace Paper Co.; and Wm. M. Wetzel of Herbert A. Post, Inc.

Supt's. Move Chicago Office

CHICAGO—The local office of the American Pulp & Paper Mill Supt's Ass'n. Inc., moved on May 1 from 38 South Dearborn street to 111 West Washington street. Harry E. Weston, associate secretary-treasurer, is in charge.

State Nursery Seedlings Output Behind Demand

WASHINGTON—Arbor Day 1949, traditional tree planting observance held in most states this year, finds all but a few State nurseries have exhausted planting stock for the current year with requests for more young trees still pouring in from farmers, small woodland owners, and lumber and pulp companies, the Forest Service of the U.S. Department of Agriculture reports.

Reports from the State nurseries, 74 of which are cooperatively financed by State and Federal forest services under the Clarke-McNary and Norris Doxey Acts and five other state nurseries, show that some 156,000,000 trees have been distributed or promised to applicants for delivery this year at cost. This marks the largest annual distribution of tree planting stock from these nurseries since 1941 when an all-time record was established in the 23 year old Federal-State reforestation program. In that year 181,000,000 trees were distributed. The number of seedlings already distributed or promised to planters this year is almost double the 1948 distribution of 84,780,000 seedlings. State foresters expect that 325,000,000 trees will be available for distribution next year.

Both State and Federal foresters hailed the growing interest of small forest land holders in reforestation as most encouraging in view of the country's waning sawtimber supply, but lamented their inability to produce more seedlings because of current limitation on their facilities. During 1948 with the nurseries straining their resources to the limit to supply the increasing demand, not one state in the nation was able to meet all its orders for tree planting stock and in some states available nursery supply did not satisfy 50 percent of the demand. Some States reported that they could have sold three or four times as many trees if their seedling supply had permitted. Records to date indicate there will be an equal, if not greater, number of unfulfilled orders this year.

While final planting reports have not yet been received from all state and federal agencies, it is estimated that 250,000 acres were reforested last year, bringing the area of reforested land in the entire country to about 5,400,000 acres. This total of acres planted includes the 1,686,880 acres on National Forests, of which 46,144 acres were planted last year, as well as somewhat lesser acreages planted by the Soil Conservation Service, Tennessee Valley Authority, and Fish and Wildlife Service. Not available as yet is the total of acres planted last year by lumber and pulp and paper companies which during the past few years have established an increasing number of their own nurseries, particularly in the Pacific Northwest and the South, for the purpose of replanting their own cutover lands.

Though last year's reforestation represents notable progress when compared with the pre-war average, Federal foresters estimate the acreage planted in 1948 was only 1/10 of the area that should be planted each year if the United States is eventualy to produce an uninterrupted suply of timber sufficient for all its timber needs and at the same time provide trees for protective purposes, such as shelterbelts and watershed protection. It is estimated that there are more than 60 million acres of land in need of immediate reforestation, of which two thirds are in private ownership.

Based on the present rate of planting, and taking into account prospective increases, foresters said that it will take approximately 400 years to reforest the nation's present poorly stocked and denuded lands. This does not take into consideration the 400 million acres from which some timber is harvested each year, 52 percent of which are annually logged in a poor or destructive manner according to recent forest surveys and are not likely to reseed themselves. In order to maintain continuous production of timber, foresters conclude, this country should adopt a vastly enlarged planting program, aiming at complete reforestation within 40-50 years.

The accompanying table shows the production of the state nurseries for last year and the production goals for the current year, excluding plantings on National Forests:

Production of State Nurseries, 1948

State	Nursery Production 1948 (Seedlings)	Production Goal 1949 (Seedlings)	State	Nursery Production 1948 (Seedlings)	Production Goal 1949 (Seedlings)
Alabama	5,798,000	18,000,000	Nebraska	.....	.....
Arizona	.....	.....	New Hampshire	375,000	650,000
Arkansas	4,043,000	10,000,000	New Mexico	.....	.....
California	67,000	78,000	New Jersey	1,046,700	968,000
Colorado	.....	.....	New York	6,166,000	20,000,000
Connecticut	183,200	350,000	North Carolina	7,233,000	9,000,000
Delaware	174,000	160,000	North Dakota	564,700	750,000
Florida	10,680,500	25,000,000	Ohio	1,950,300	2,546,500
Georgia	19,593,000	34,500,000	Oklahoma	938,500	1,200,000
Idaho	314,300	325,000	Oregon	1,018,000	2,000,000
Illinois	4,105,800	8,435,000	Pennsylvania	4,812,000	30,000,000
Indiana	5,146,000	5,039,000	Rhode Island	.....	.....
Iowa	444,000	500,000	South Carolina	11,460,000	25,000,000
Kansas	1,022,000	1,000,000	South Dakota	.....	.....
Kentucky	830,800	1,750,000	Tennessee	183,000	4,000,000
Louisiana	4,448,700	13,000,000	Texas	16,045,000	22,000,000
Maine	53,850	100,000	Utah	152,900	170,000
Maryland	848,500	1,500,000	Vermont	475,600	1,000,000
Massachusetts	688,000	717,000	Virginia	1,876,670	5,000,000
Michigan	7,743,900	33,443,500	Washington	2,621,000	3,450,000
Minnesota	2,646,800	3,200,000	West Virginia	1,500,000	3,000,000
Mississippi	13,678,500	15,000,000	Wisconsin	12,905,000	15,500,000
Missouri	1,729,000	5,815,000	Wyoming	.....	.....
Montana	481,500	750,000			
Nevada	.....	.....	TOTAL	156,243,720	324,897,000

Can. Roofing Paper

OTTAWA — Latest annual report for the roofing paper industry issued by the Canadian Government reveals that 21 plants operated in this industry in 1947 (the same number as in 1946), with the average number of employes rising to 2,183 compared with 2,015 and salaries and wages increasing to $4,236,230 as against $3,269,745 in 1946.

Cost of materials advanced to $14,324,193 as against $11,577,563 in previous year and the gross value of production rose to $27,405,316 against $22,785,134, with the value added by manufacture moving up to $12,584,603 against $10,801,868.

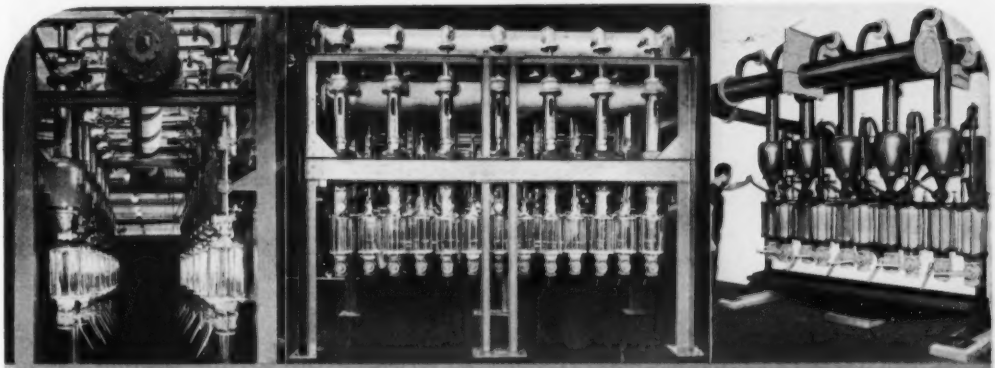
Products manufactured in this industry in 1947 included the following, with figures for the previous year in brackets: asphalt shingles, $12,072,379 ($10,822,894); mineral and surfaced roll roofings, $4,824,706 ($3,820,828); smooth surfaced roll roofing, $3,061,309 ($2,670,327); tar and asphalt saturated felts, $3,368,648 ($2,423,022); tar and asphalt and saturated and coated sheathings, $1,315,798 ($1,132,017).

Wood Chem Symposium

BROOKLYN, N. Y.—A symposium on wood chemistry will be presented by the Institute of Polymer Research at the Polytechnic Institute of Brooklyn on May 27. Morning session will start at 10:00 a.m.; afternoon session, 2:15. Chairman of the symposium will be Dr. Egon Gleisinger, chief, Forest Products Division, FAO of the United Nations, Washington, D. C. Place: Student lounge, 99 Livingston street.

Quickest, Slickest Answer to Today's Question...

WHAT TO DO ABOUT DIRTY PAPER?



DIRTECS

Dirtecs are demonstrating in mill after mill that they are the happiest solution to the dirt problem, whatever the amount and character of the dirt in the stock, and whatever the kind and volume of stock.

Dirtecs are easy and economical to install and operate. They get the dirt and get it out of the papermaking system for good and all.

Before you do anything else about the demand for cleaner paper, find out what Dirtecs can do for you.

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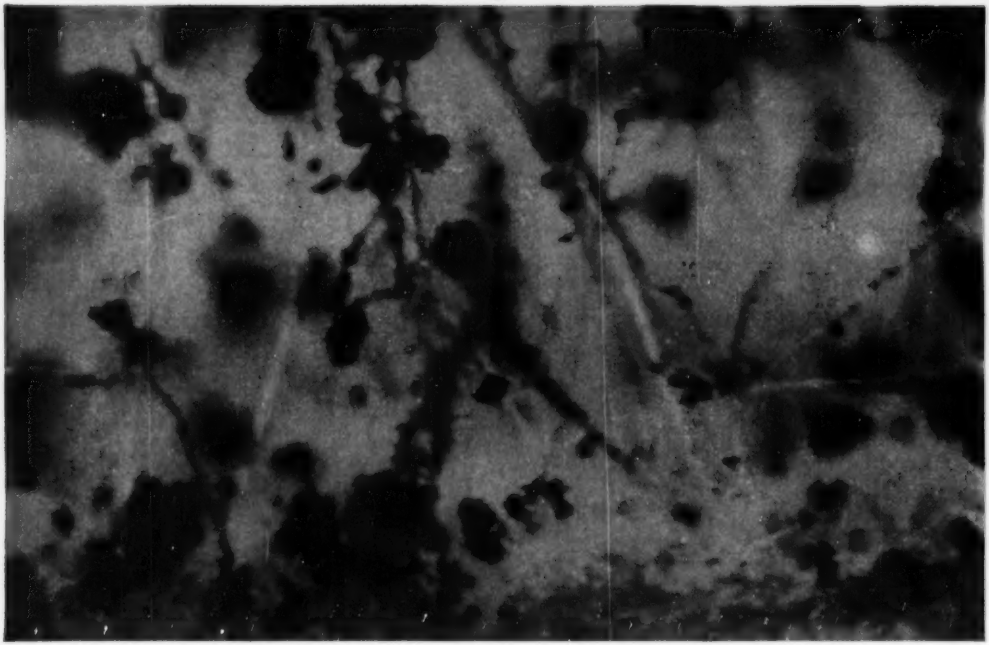

An example of Aspergillus Niger—a common discoloring mold magnified seventy times.

stop feeding your profits to fungi!

How much profit are you losing to mold and bacterial attack? These microorganisms cause countless losses from mildew on lap stock in storage, from deterioration of paperboard cartons in humid warehouses, deterioration of machine felt and dry rot in pulp wood.

Now you can effectively control such losses with Dowicides, Dow's industrial germicides and fungicides. Dowicides are recognized throughout the pulp and paper industry as the best protection against mildew and rot during practically all of the manufacturing processes . . . from raw wood to the finished product. For instance, starches, casein, glue and other decomposable adhesives can now be made mold-resistant with Dowicides.

Investigate Dowicides now. Protect your profits from fungi! Complete laboratory facilities are maintained by Dow to help you solve your problems. Just contact your nearest Dow office or write direct to Midland.

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Instrumentation for Papermaking and Converting

H. A. SHOLL

Paper Industry Engineer, Brown Instruments Division of Minneapolis-Honeywell Regulator Co.

In converting mills measurement and control of the variables affecting quality, production and economy of stock preparation, papermaking and finishing have been neglected. In many plants the advantages of instrumentation are not known because satisfactory profitable operation has been obtained by experienced operators. However, these plants are interested in knowing details of standard and new instruments that can make an operator's work easier and more certain. In aiding the workman, these tools improve quality, production and economy, thus making them desirable to plant men and management.

Great strides have been made in beating and refining equipment and techniques, but in many cases some of the added advantages are sacrificed by failure to take advantage of available instrumentation. The inexpensive liquid level recorder is desired by operators on every chest or measuring tank where levels are important. These show the trend of level change and eliminate the need of hard-to-use measuring sticks. Chests are thus prevented from overflowing or running dry and the workman has permanent proof that he did his job well. At the same time management is aided by avoiding waste from overflowing tanks, and quality is kept uniform by more accurate additions of a measured fluid to the stock mixture.

Stock Blending

Increasing use is being made of instruments for the blending of stock, some systems are continuous but most are of the batch type. Continuous stock blending is of great advantage where large tonnage is required of the same furnish. Rotosleeves are being used as the primary flow measuring device for the stock and chemical flows required. These transmit the float position, which is proportional to the flow, either electrically or pneumatically to a standard recording flow meter with ratio control. Two mills use paper machine speed changes to reset a master flow controller which in turn adjusts flow of each stock and chemical in the ratio desired.

These continuous ratio controlled stock mixing systems are being used by several large newsprint producing companies. Many mills make a variety of products that require a batch type of blending for best control of paper quality. A series of chests are used in the generally used batch system to supply the paper machine with the required mixture of stock.

Frequently, one man is responsible for the mixing operation, with instrumentation centrally located to aid him in measuring the amounts of material to the machine chest. Push button switches are located in the control room for pump and valve operation, with signal lights from each piece of equipment so he can see at a glance its operation. Liquid level recorders on each tank or chest guide in determining the chest to be filled or emptied, and whether there is sufficient material for the mixing operation planned.

pH Control

Many products require pH control of stock during its preparation to give the characteristics demanded of the finished sheet. Suitable electrodes have been developed, rugged enough for continuous operation in the beater or for measurement and control of reagent addition at the Jordan. Maintenance of pH equipment of a preventative type requires little time to keep the equipment in continuous operation at reasonable cost. Both flow and immersion type electrode assemblies are available with standard or extra strong glass electrodes made for normal or high temperature and when required a special glass is used to avoid sodium ion contamination.

Advances in pH electrode and amplifier have been equalled by the electronic recording controllers built to give the sensitivity required by the primary elements. This modern combination allows correction of reagent as soon as an effect is present at the electrodes. This sensitivity permits equipment such as a pump or Jordan to give sufficient reagent mixing to produce excellent control. Thus capacity tanks with large agitators necessary with older pH measuring equipment can be eliminated at a considerable saving in power and capital expenditure. Without present day sensitivity of detecting pH change it has been necessary for many applications to use two pH instruments, one producing rough control but keeping the variable within the ability of the final close controller. One electronic pH system can control most applications where two of the less sensitive type were required. This not only cuts the original investment in half, but the one instrument is more easily adjusted to give better overall control of the process.

Size Preparation

Size preparation and storage can ad-

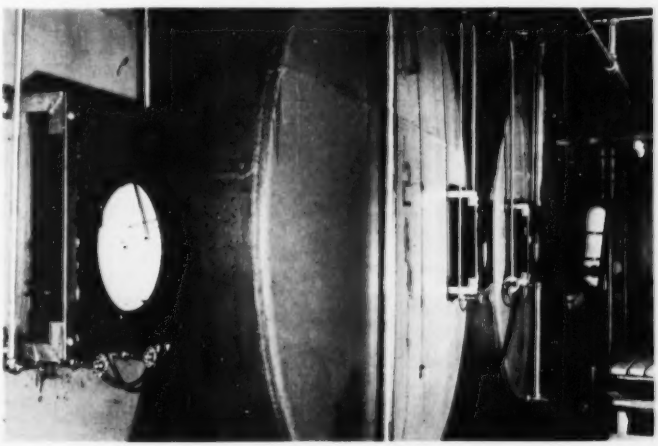


Figure 1—Size storage tank liquid level recording.

Presented on April 19th meeting—Black-Clawson, Shartle, Dilts Lecture Course Program.

vantageously use instrumentation to insure correct cooking temperatures and the right proportions of size and water in the material added to the stock. As in Figure No. 1 the common batch system can use a liquid level recorder for the size mixing tank so the operator will know how many inches of each component are added, and to furnish him and management with proof that all batches have the same characteristics. Size storage tank liquid level recorders show what tank should be pumped from and which tank should receive the freshly mixed batch.

Continuous size mixing systems are now in use. These, too, require similar instrumentation plus temperature and liquid level control. A permanent record of these variables may not be required, so it is possible to use non-indicating temperature controllers and float operated electrical or pneumatic controllers to start and stop pumps or to operate valves. A thorough analysis of each application is necessary to insure the best control and measurement at a cost warranted by the process needs.

Chemical Measurement

Size, clay and alum may be measured in tanks and dumped into each beater charge. The operator's best intentions are often defeated when he must leave his other duties to measure with a yardstick and calculate how many inches, of a fluid in the measuring ing tank, should be added. A simple liquid level recorder furnishes a permanent record so the operator need not use his memory, but can see just how much material has been added. A further step has been taken by some mills to make these measuring tank additions automatic. A liquid level recording control with electric push buttons permit the additions of a preset measured quantity of fluid from the measuring tank to the stock where and when required. This type of controller resets itself by filling the measuring tank after each discharge, thus insuring the right amount of material and giving more time for the experienced workman to check variables that require his thinking ability.

Stock Control

Instrumentation of stock preparation is profitable through its aid in delivering the right furnish to the wet end of a papermaking machine, thus insuring uniform high quality in the finished product at all times. At the wet end temperature control is frequently necessary to give the stock its best forming and drainage characteristics. Constant liquid level in the head box helps keep tonnage high and caliper constant. Suction box and suction couch roll vacuum must be kept constant if the machine is to remain balanced. Some type of indicating vacuum gauge is always used but the present trend is to supply the workman with a recorder which will give him all the variations that occur. Thus he can see the self correcting changes of vacuum without having to watch the indicating gauge for minutes.

Paper Machine pH Control

Although pH control was mentioned for beaters and refiners, the products of many mills require pH control shown in Figure No. 2 at the wet end of the machine. A frequent application is the measurement of pH of white water and control of the reagent to the fan pump suction. Reagent can be added where required, as in the white water chest, machine chest or head box, but the fan pump acts as an excellent mixing device and frequently eliminates the need for agitators as would be necessary if it were added to the white water chest.

Machine Speed Recording

A continuously indicating tachometer is being placed at the wet end of many modernized machines in addition to a parallel recorder at the dry end. The recorder can then be used to show the hours of production by adding a suitable switch that returns the record to zero for the duration of every break. Some mills prefer other tachometer combinations such as a continuous record with a large indicating scale at each machine with a multiple recorder which shows speed of all machines and their hours of operation.

Dryer Instrumentation

Radiant heat dryers are being applied to papermaking machines to increase drying and capacity. These are generally placed at the wet end with simple protective type controls. In effect they are equivalent to adding a number of drying cylinders to add evaporation while control is obtained by throttling steam to the succeeding cylinders. Their addition produces best results if the remainder of the drying is closely controlled. Generally weight or spring loaded reducing valves do not give the firmness of control to produce uniform drying. However, paper mill modernizing has added or planned recording control of the proportional automatic reset type which is found profitable whether radiant drying is used or not.

There are many ways to control steam to a paper machine, but there is one most profitable for each dryer, which can be found by a thorough analysis of operating conditions and the desired product. Therefore, it is unsafe to always recommend one type. Pressure, differential pressure, flow and temperature measurements are used for control, and temperature in particular has a number of variations. Some dryers used for converting do not justify recorders but do need temperature control shown in Figure No. 3 of the non-indicating type on each drying cylinder. On others a single pressure measurement can be used to adequately control the entire bank of cylinders. While some must be controlled at different pressures or temperatures for a number of sections.

When temperature control is indicated, a most flexible system can be obtained by using highly accurate sensitive electronic measuring instruments with thermocouples at important points in section headers or in the actual cylinders. These permit an occasional check of temperature gradient and use of the best measuring point for each product. A specialty mill can find one product which is best controlled from the first section header

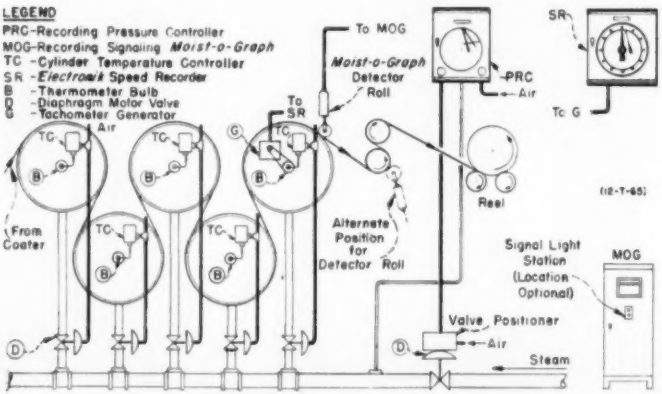


Figure 2—pH control on machine wet end.

temperature, while another product has its optimum production and quality when the control point is in the last cylinder. Change from one controlling point to another is not easy when pressure filled thermometer systems are used but is both quick and easy if the electronic type measuring instrument is used.

Steam supply to the paper machine frequently varies to such an extent that the temperature or flow control of a dryer is constantly being upset. In most mills this is caused by poorly regulated machine room header pressure, controlled by a weight or spring loaded pressure reducing valve. For this reason it is well to consider the use of a recording pressure controller of the proportioning and automatic reset type. Good temperature or flow control depends on a constant adequate supply of steam, while variation of header pressure will cause constant hunting of the dryer control and in turn cycling of the moisture content and quality of the final product.

Moisture Control

Sheet moisture content can be continuously recorded to guide the operator in the adjustment of his machine to produce uniform high quality. This instrument uses a Wheatstone bridge circuit to continuously measure the paper sheet resistance through a stainless steel roll in contact with the paper, generally at the last dryer cylinder. For any one furnish, moisture content is found to have a large reproducible effect on the total resistance, while changes of pH, thickness, speed and temperature are generally small enough to have no observable effect.

Advantages gained through use of the Moist-O-Graph are possible because it is a real tool to the machine tender showing changes of moisture as they occur. He does not have to wait for a laboratory report of incorrect moisture in a finished reel, but can make whatever adjustments to the machine his experience indicates. Most papermaking machines run at a constant speed, the steam is controlled, therefore, if moisture variation is recorded the operator's thinking process is initiated to determine reason for change and what is required to reestablish the optimum conditions. Perhaps a cylinder is air bound, stock freeness or consistency or any other variable has changed.

The operating characteristics of one machine were found to be fairly constant, so the operator's analysis indicated that caliper was varying to cause uneven moisture in the sheet. This was traced to consistency changes which could not be controlled, but could be compensated by varying stock supply to the wire. Signal lights were installed at the wet end which warned the operator of moisture change beyond allowable limits, while experience taught the amount of slice change required to bring caliper and moisture back to normal. Although caliper changes continue, adjustments can now be made as soon as it begins to vary. As a result close control of moisture and caliper is insured throughout each roll of paper.

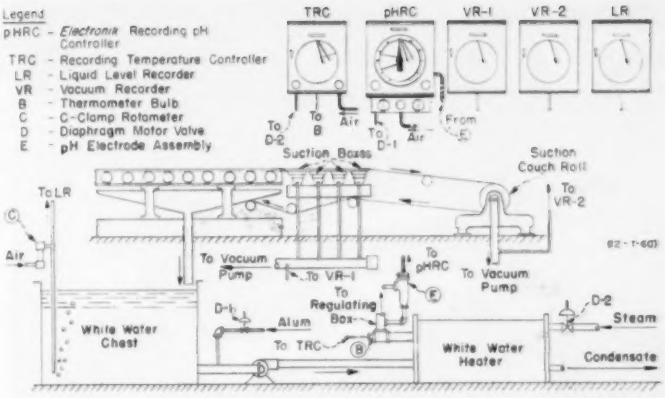


Figure 3—Temperature control of coating dryer.

The above example illustrates that moisture control which could be obtained by using the Moist-O-Graph to reset steam supply to the machine would not be desirable for this mill. That type of control could keep moisture throughout the reel constant, but the caliper changes would result in defective paper. Every characteristic of a paper machine must be known and considered before a decision can be made as to whether Moist-O-Graph control would be advisable. When control is desired, a recommended first step is the use of a recorder that can later be converted to a recording controller, to help in the study of the operating characteristics of the particular machine. The number of variables affecting many converting drying operations, such as gumming or coating, are fewer than on a papermaking machine. Therefore, it is easier to predict the advantages of moisture control for these applications although the same careful analysis is still necessary.

Weight and Caliper

Continuous caliper and basis weight measurement are frequently desired by papermakers and converters. Developments are in progress which are expected to give relatively simple methods accomplishment. There is an installation using a mechanical calipering device connected to an electrical continuous recorder. This seems satisfactory in the mill where it is used but insufficient data has been secured to recommend it generally. Another instrument is now in operation which is expected to give a continuous record of basis weight through the use of Alpha and Beta rays, thus eliminating any device in contact with the sheet.

Gloss Recording

A continuous gloss recording and controlling instrument shown in Fig. No. 4 with a tachometer recording supercalender speed is expected to be of great benefit to mills which supercalender coated paper. Gloss can be recorded for both sides of the sheet on one chart to give a comparison. Another aid to calendar operators is a recorder to continuously show very accurately the position of the two ends of calender rolls. This will help to position rolls as desired and insure both ends are at the same height.

Although some papermaking machines are now equipped to coat on machine there are many mills using manufactured paper in machines which may coat with a starch-clay, wax, gum or plastic material to produce the required surface. Instrumentation for the coating part of a machine applies generally to coating on machine or to coating in a converting plant. Mixture temperature control may require non-indicating or recording instruments with limited proportional band type pneumatic operation, however, only by studying each application can the best instrumentation be recommended. Discussion with an instrument engineer is advised for this and every other application. He can then predict the results possible from one or more ways of doing this job.

Some coating pans have the level of coating material controlled by using an overflow and recirculating the mixture. Others do not recirculate and can use to advantage an electrode controller which adds the fluid as needed to keep the level in close limits. These electrode level devices are supplied with a sensitivity depending on the resistance of the material used. There-

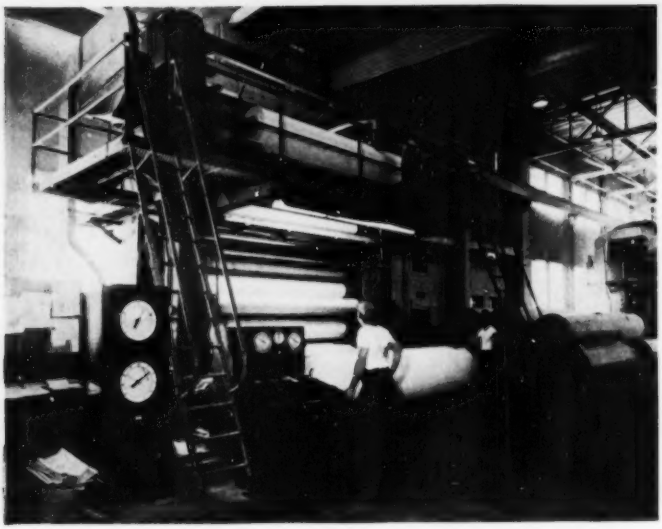


Figure 4—Continuous gloss and speed recording.

fore, it is necessary for the manufacturer to know whether the approximate resistance is 100, 1000 or 100,000 ohms so he can supply a satisfactory relay. Voltages and currents are low to avoid shock or sparks, but are sufficient to use the material as the contacting part of the electrical circuit from the electrodes through the coating. These electrode control devices are inexpensive and can be used for on-off control of practically any fluid which has a reasonable conductivity. Control by stock level of the water added to a stock washer is one use for these systems.

Converter Instrumentation

Temperature recording and control of many fluids used in converting plants is a necessity. Glue pots, wax melters, casein mixing, hot water for size mixing and the more elaborate time pattern temperature control for starch converting are examples. Many plants convert their starch adhesive with instrumentation shown in Fig. No. 5 and have two major variables to contend with, changing cooking cycle and changes in the starch purchased. A thermometer controlling from a cam is frequently used but experience has shown that a thermometer bulb cannot react quickly enough in a starch cooker to give the same results every time. Therefore, better sensitivity and accuracy of electronic controllers is now being used with small mass thermocouples to convert starch thus eliminating variations due to cooking procedures.

Great care is used in every phrase of papermaking and converting to keep moisture right. However, once it is made, little is done to keep air temperature and humidity at equilibrium condition. As a result difficulties are experienced in finishing rooms, lithographing and printing plants, and all blamed on the paper makers. Some lithographers hang their paper by the sheet in an air conditioned space in an effort to have it uniform for their process. Controlled temperature and humidity in finishing rooms is as necessary as in the constant moisture test laboratory, and for many types of paper can be obtained at very little cost. Frequently, a small portable humidity temperature recorder can be used to show when moisture or heat should be added to prevent changes in the paper handled in a finishing room. Some mills have found air conditioning important enough to install complete industrial air conditioning systems thus insuring constant year around quality in their products.

Space heating control of paper storage rooms will prevent extreme cold from lowering the quality of paper and improve conditions and efficiency of workman in the storage space. Few provisions are made in most paper plants to control temperature in working areas. Perhaps there is a blast type of heater turned on when men feel cold and off if it gets too hot and they think of it. A very few dollars can secure a non-indicating rugged industrial type thermostat to control mill heating at the level of greatest efficiency. At the same time that efficiency is increased it is generally found that too much heat has previously been used, so there are savings in steam or gas.

Machine ventilating systems can benefit by using non-indicating temperature control. Instead of heating the air to whatever temperature, a varying steam supply will allow, they can be controlled to give constant temperature ventilation air supply thus preventing changes in the drying rate of the machine and cycling of the sheet moisture.

Control of measurable variables directly affecting profits of paper manufacturing and converting plants is a necessity. The instruments for most needs are available in a wide variety from simple to complex and more are being developed for special requirements. However, do not specify instruments because someone you know is using one on what seems the same application, it may be different. Call in an experienced instrument engineer to help analyze your problem, discuss and determine the improvements in quality, production and economy which can be expected. Then you will show the results to be expected and that the investment can be profitable.

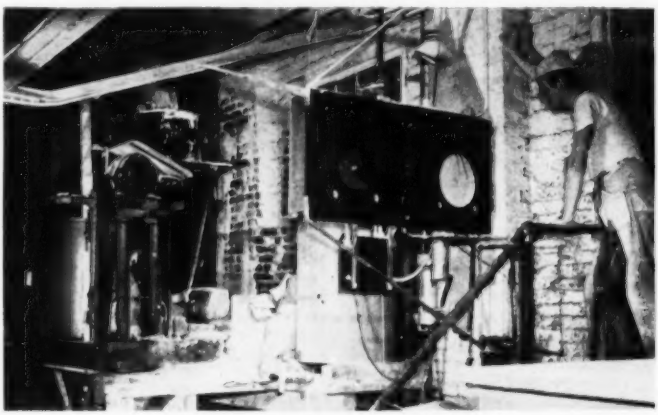


Figure 5—Time pattern starch converting control.

The Drying of Bark

A Preliminary Report
Northeastern Wood Utilization Council

In view of the fact that the moisture content of bark is usually high and a certain amount of water must be removed for efficient burning, as well as for other forms of utilization, the Northeastern Wood Utilization Council has been carrying on extensive correspondence with equipment manufacturers. This report does not profess to give a complete coverage of the drying equipment available, and development is going forward rather rapidly. Suggestions on new equipment will be welcome.

Methods of Estimating Moisture Content

Two different bases are used for expressing moisture content. In the lumber industry, the standard procedure is what might be described as the dry weight method. According to this method, the moisture content is expressed as a percentage of the actual weight of oven-dry material. For example, a ton of bark at 100 percent moisture consists of ½ ton of oven-dry bark and ½ ton of water. In the pulp and paper industry, on the other hand, it has been customary to follow the wet weight method, where the moisture content is figured as the percentage of water on the basis of total weight. A moisture content of 100 percent would mean that it was all water. To avoid confusion, the method in use should always be clearly stated.

The wet weight method was used by Rettie and Simmons in their paper entitled "Estimates of Bark Supply in the Northeast". Since the dry weight method has been used in previous publications of the Northeastern Wood Utilization Council, for example in the papers by the U.S. Forest Products Laboratory staff in Bulleton 23, "Economies in Seasoning", and since many of those studying bark utilization are likely to follow this method, we have included a conversion Chart Table I.

In this table, the BTU value of a pound of oven-dry bark has been kept at the figure of 8,220 taken by Rettie and Simmons from the TAPPI report. This, as they suggest, is probably low. The standard figure for oven-dry wood (Wise's "Wood Chemistry") is an average of 8,600 BTU per pound. Bark contains about 40 percent lignin, as compared with 25 percent for wood, and lignin has a higher calorific value than cellulose, so that a figure of 9,000 for bark probably would be conservative. This would raise substantially the BTU figures and percentages in columns 3, 4 and 5.

Table 1
Conversion Table, Wet and Dry Weight Methods

Moisture Content Wet Weight Method	*Moisture Content Dry Weight Method*	*Barks, BTU per lb. Dry Weight Method*	*Barks, BTU per ton Dry Weight Method*	*Fuel Value vs. Coal (13,500 BTU per lb.)*
Oven dry	Oven dry	8,220	16,440,000	61%
10%	11%	8,086	16,180,000	60%
20%	25%	7,915	15,830,000	59%
30%	43%	7,695	15,390,000	57%
40%	67%	7,415	14,830,000	55%
50%	100%	7,000	14,000,000	52%
60%	150%	6,390	12,780,000	47%
70%	233%	5,377	10,760,000	40%
80%	400%	3,340	6,680,000	25%

A company would have to determine whether the cost of a given percentage reduction of water in the bark would be justified by the increase in fuel value. Since many mills are now paying $2.00 or more per ton for disposal of their waste bark, this expense would be eliminated if the bark were used for fuel, and the dollar value of bark, as compared with coal, would be increased by a corresponding amount per ton.

De-Watering Methods

There are various methods of reducing the moisture content of waste bark, and thus increasing its value as fuel.

(a) *Dry debarking*, as practiced by certain pulp companies.

(b) *Use of vibrating screens* to remove some of the surplus water. Equipment is made by W. S. Tyler Co., Cleveland, O., and other companies. A pilot plant operation of Productive Equipment Corp., 2926-28 West Lake St., Chicago 12, indicated cost of removing surplus water at 30 to 35c per ton on dry basis: power requirements were approximately 2 kilowatt hours per ton.

(c) *Bark presses*, to carry this process further. The following companies may be listed:

D. S. Murray Co., Milwaukee, Wis. Continuous screw press, based on Swedish patents.

Nekoosa Mfg. Co., Nekoosa, Wis. Reciprocal bark press.

George L. Squier Mfg. Co., Buffalo, N.Y. Improved bark crusher.

Stacom Industries, Inc., 29-28 41st Ave., Long Island City, N.Y. Developing roller type hydraulic press, known as the Stacomizer, which comminutes the bark in same operation, so that burning in air suspension is feasible.

(d) *Dryers.* Flash Dryer Division of Combustion Engineering Co., Chicago, is installing a drying system for Great Lakes Paper Co., Fort William, Ontario.

Link-Belt Co., New York, makes the Pehrson Rotary Louvre Dryer, using flue gases. Report received by Council on installation by New Brunswick International Paper Co., Dalhousie, N.B.

(e) *Chemical treatment.* For reduction of moisture content below 50 percent (dry weight), W. A. Hammond Drierite Co. Xenia, Ohio, accelerates the process by adding a special chemical. The Council arranged with the Champion Paper and Fibre Co. to send them a sample of wet bark, but report on the test is not yet available.

For more intensive drying, we have detailed reports on equipment manufactured by Vulcan Iron Works, Wilkes-Barre, Pa.; C. O. Bartlett & Snow Co., 6200 Harvard Ave., Cleveland 8, Ohio; and Hardinge Co., 122 East 42nd St., New York. The problem which we put up to them was the method and cost of drying from 15 to 20 tons of bark, per day, dry weight, reducing the moisture content from 80 percent to 10 percent. Their estimates indicate that about half a ton of coal would be required per ton of dry bark, or an equivalent in other fuels.

Our present view is that 10 percent moisture (dry weight) is lower than is necessary for most forms of utilization; in many cases 20 percent would be sufficient. Probably the most economical method of accomplishing this is to do the drying in several stages,

Presented to Northeastern Wood Utilization Council Bark Conference and published in Bulletin 25 "The Chemistry and Utilization of Bark."

that is, to use one of the new drying methods already listed, perhaps after preliminary treatment with a vibrating screen, so as to get the moisture content down to about 40 per cent (dry weight), and then to complete the dewatering process with a standard rotary dryer. Hersey Manufacturing Co., E and Second Sts., South Boston, Mass., makes a dryer which is being used to dry green sawdust for use in wood flour; fuel consumption for feed rate of 6,000 lbs. per hour reported as 34-40 gallons of No. 2 fuel oil per hour. The bark would have to be in shredded form. Similar use has been made of the Heil Dehydrator, manufactured by Arnold Dryer Co., 3000 W. Montana St., Milwaukee, Wis.; moisture content of sawdust was reduced from 67 percent to 10 percent (dry weight) at rate of approximately 3,500 dry pounds per hour; 15 gallons of oil required, and total cost, including interest and amortization, estimated at $8.75, which figures out at $4.00 a ton. Equipment for this intensive drying is available from other companies, including those listed above.

Proposed Research Program

We outline below a possible series of studies on various methods of bark utilization, for which the Northeastern Wood Utilization Council would be ready to undertake the organization and supervision. That is the function of the Council, rather than to carry on research with its own staff. We shall welcome the reaction of pulp mills to this program, in whole or in part. In our preliminary estimate of expenses, the experience of the Council is that the use of experts for part time provides a high quality of work at comparatively low cost.

1. *Fuel.* Heating value of bark at various moisture contents, in comparison with other fuels. Types of burning equipment. Methods of drying bark, and estimated costs. Requires services of competent engineer part time, one year, $2,500.

2. *Tannin.* Possibility of extraction from bark of certain Northeastern species, on assumption that low cost of raw material would balance comparatively low tannin content. Continuation of tests by Eastern Regional Research Laboratory, which requests bark samples from pulp mills. Probably cooperation of National Tanners Council. Duration of studies, two years. No direct expense.

3. *Agriculture.* (a) Use for soil building. Continuation of tests by Seabrook Farms, New Jersey. Estimating costs of drying and pulverizing. (b) Cattle bedding. Tests of liquids absorption and fertilizer value by one or more Agricultural Experiment Stations. Estimating costs of drying and hogging, in which various manufacturers have offered to cooperate. Duration of studies, two years. General expenses $500.

4. *Chemicals.* Investigation of extraction of various chemicals. Survey of field engineer part time, two years, at $2,500, general expenses at $500, total $6,000.

5. *Fibre Board.* Investigation of possible methods of producing wallboard or insulating material from bark, including quality and competitive value of products. Engineer part time, two years, at $2,500, general expenses at $5, total $6,000.

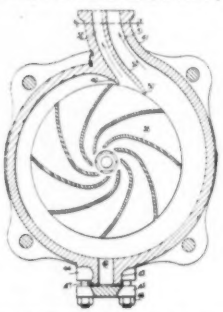
The organization and supervision of the above studies, with compilation of results, would entail overhead expense by Northeastern Wood Utilization Council, estimated at $2,500 for two years, or $5,000, making total cost of proposed research program $20,000.

Patent Abstracts

● ***In addition to abstracts on the technology of pulp, paper and related industries, miscellaneous abstracts which may provide useful information to our readers are included herein.***

2,454,390—Centrifugal pump. Oystein Jacobsen, Montgomery County, Ohio, assignor to The Duriron Co., Inc., Dayton, Ohio.

In a pump, a casing of volute shape and having a single inlet and a single outlet passage-



way, an impeller mounted in the casing to force fluid from the inlet to the outlet passageway, a plurality of vanes mounted on said impeller, and means for preventing turbulence between the outlet passageway and the area immediately surrounding the impeller at the position where the passageway merges with the inter-vane space at the periphery of the impeller, said means including a guide vane extending through the outlet passageway and beginning at a position near the periphery of the impeller closest to the outlet passageway, and a projection extending inwardly from the casing as far as the impeller to separate the suction and pressure effects of the impeller.

2,454,533—Manufacture of fibrous products deriving from lignocellulose. Henry E. Walter, Cloquet, Minn., assignor to Wood Conversion Co., Cloquet, Minn.

The method of treating lignocellulose which comprises heating lignocellulose in the absence of suspending liquid and in an atmosphere of steam at an elevated temperature above 212° F. at which the lignocellulose is rendered plastic, and simultaneously defibering the plastic lignocellulose and incorporating substantially uniformly throughout the lignocellulose chemical reagent reactive therewith and containing sulfur dioxide in salt-form, whereby to produce chemically treated fibers without substantial loss of constituents of the original lignocellulose.

2,454,534—Process for defibering lignocellulose while subjected to steam and alkali-metal hydroxide. Henry E. Walter, Cloquet, Minn., assignor to Wood Conversion Co., Cloquet, Minn.

The method of treating lignocellulose which comprises heating lignocellulose in the absence of suspending liquid and in an atmosphere of steam at an elevated temperature above 212° F. at which the lignocellulose is rendered plastic, and simultaneously defibering the plastic lignocellulose and incorporating alkali-metal hydroxide substantially uniformly throughout the lignocellulose, whereby to produce chemically treated fibers, without substantial loss of constituents of the original lignocellulose.

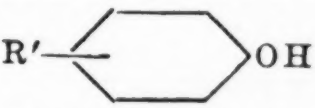
2,454,539—Method of preparing resinous linear polyesters in crumblike form. Ellington M. Beavers, Philadelphia, Pa., assignor to Rohm & Haas Co., Philadelphia, Pa.

A process of preparing millable, moldable, crumblike, curable thermoplastic material which comprises simultaneously mechanically working in a power mixer of the kneading type and heating, at 50° C. to 150° C. until a crumb is formed, a mixture of a peroxidic curing catalyst and a linear, unsaturated, thermoplastic noncrystalline polyester of molecular weight of 5000 to 50,000, said ester being the product of condensing by heating together a saturated unsubstituted glycol, a saturated unsubstituted dicarboxylic acid containing a minimum of four carbon atoms, and an unsubstituted α,β-unsaturated dicarboxylic acid, said unsaturated acid being present in an amount from 1% to 20% of the total acids on a molar basis, one of said glycol and said saturated acid containing a branched chain, and peroxidic curing catalyst being present in an amount from 0.055% to 0.0025%, based on said polyester, and being inversely proportional to the percentage of said unsaturated acid used.

2,454,544 — Polymeric detergents comprising water-soluble salts of the half-esters of dicarboxylic acids and the formaldehyde condensates of hydrocarbon-substituted phenoxy-poly-

alkoxy alkanols. Louis H. Bock, Huntingdon Valley, and James L. Rainey, Abington, Pa., assignors to Rohm & Haas Co., Philadelphia, Pa.

A modified phenol-formaldehyde condensation product having detergent properties wherein the phenol-formaldehyde condensate is an oily to



brittle resinous condensation product of from 0.5 to 1.0 mole of formaldehyde and one mole of a phenol from the class consisting of ortho-substituted and para-substituted phenols, said phenol having the formula in which R' is a saturated hydrocarbon substituent containing eight to eighteen carbon atoms and wherein the modification of said condensation product consists of the group

$$-(RO)_y-R-OCO-R''-(COOM)_z$$

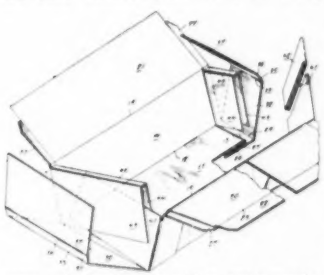
replacing the original phenolic hydrogen atoms and being attached to each phenol nucleus in said condensate through the phenolic oxygen atom thereof, wherein R in both occurrences is the same saturated alkylene group containing two to four carbon, atoms, R'' is a saturated hydrocarbon radical, containing one to seven carbon atoms, from the class consisting of alkylene and arylene radicals, y has a value of 0 to 20, M is a metal from the class consisting of alkali and alkaline earth metals, and z has a value of 1 to 2.

2,454,546 — Surface-active linear polyesters. Louis H. Bock, Huntingdon Valley, and James L. Rainey, Abington, Pa., assignors to Rohm & Haas Co., Philadelphia, Pa.

The process of preparing linear, water-soluble, polymeric, surface-active polyesters which comprises preparing a resinous linear polyester by esterifying an alkane-diol containing six to eighteen carbon atoms and an equivalent amount of maleic acid at a temperature between about 150° and 200°C. and thereafter reacting by heating said linear polyester with a water-soluble bisulfite in the ratio of 0.5 to 1 mol of said sulfite per mol of esterified maleic acid at the double bond of the maleic acid.

2,454,573 — Folding box. Joseph Scher, New York, N.Y.

A folding box including a base, inner and outer end walls, intermediate end walls, side walls,



upper walls forming closure flaps, and integrally-formed reinforcing bands extending around the box at each end thereof, the box being formed from a single blank of sheet material having a plurality of intersecting fold lines defining such base and walls, the inner and outer end walls being disposed longitudinally of the base, the intermediate end walls being disposed longitudinally of the side walls, and the remaining walls being disposed laterally thereof and being defined at opposite ends thereof by a pair of spaced, transverse fold lines, each reinforcing band comprising a pair of adjacent strips of unequal width separated by a fold line and lying transversely of the blank between one of said transverse fold line and adjacent the end wall portions the outer strip of each pair being wider than the inner strip, which strips are folded back in over-lapping relation on the outer surface of the box, and forming an external fold line extending around the box at a point spaced from the end thereof, and an internal fold line extending around the box between the external fold line and such end, the internal fold line providing an internal abutment which is engaged by the inner end wall for retaining the latter in position.

2,454,717 — Modified alkyd sizing composition. John W. Robertson, Englewood, N.J., assignor, by direct and mesne assignments, of one-half to Ellis-Foster Co., a corporation of New Jersey, and one-half to Montclair Research Corp., a corporation of New Jersey.

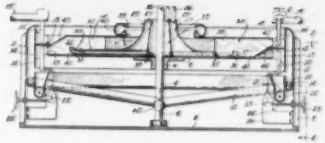
An emulsifiable resinous composition adapted for application to jute fibers to impart sizing, reinforcing and heat-sealing properties thereto, which comprises in homogeneous combination, a resinous extract of pinewood consisting of the gasoline-insoluble resinous portion of the aromatic hydrocarbon-soluble constituents of pinewood, tallow and a reaction product of 1 mole phthalic anhydride, ¾ to 2 moles glycerol and ½ to 1½ moles tall oil; said resinous pinewood extract and tallow together amounting to from 10% to a maximum addition of from 40% to 150% of the said reaction product, the relative amounts of pinewood extract and tallow at the maximum addition thereof ranging from a ratio of 1:1 to 5:1, and the maximum amount of pinewood extract and tallow and the ratio thereof in the mixture varying directly with the amount of tall oil in said reaction product.

2,454,785 — Method of making urea-aldehyde resin dispersions. Loy S. Engle, Harrington Park, and Edward Sheridan, South Bound Brook, N.J., and Earl K. Fischer, Long Island City, N.Y., assignors to Interchemical Corp., New York, N.Y.

The method of dispersing pigment in a heat-convertible urea-aldehyde resin without gelling the resin, which comprises malaxating a mixture of the pigment, and a 60% to 90% solution of the resin in a solvent boiling within the range of 100°C to 250°C., while cooling the malaxating machine, the proportion of pigment to resin solution being such as to yield a malaxatable plastic.

2,454,798—Centrifugal separation of solids according to specific gravity. Joseph Harrington, Riverside, Ill.

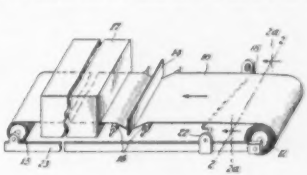
In a device of the class described, in combination with a rotatable turret or head, a pair of screens disposed concentrically about and spaced from the edge of said turret, said turret being provided with a series of spaced apart radial channels, means providing a series of chambers in said channel, said chambers opening at the outer periphery of the turret adjacent one of said screens, means providing a horizontal imperforate partition dividing said chamber and screens into screened compartments, means for delivering liquid carrying solids of different specific gravities therein to said turret to cause said turret to



centrifuge said liquids into said chambers, means for delivering controlled additional liquid to said chambers in sufficient amounts whereby the major portion of the liquid in said chambers will not pass through one of said screens but will back up in said chambers and flow inwardly toward the center of rotation of the turret, means disposed between said chambers and the axis of rotation of said turret for conducting said backed up liquid into a channel that is separate from said chamber, means for delivering said backed up liquid carrying the lighter constituent to said second screen under the influence of centrifugal force created by said turret for causing said liquid to pass through said second screen and said lighter constituent to be retained by said second screen, and means for collecting said last mentioned retained constituent from said second screen.

2,454,863—Web tension equalizing device. Guy J. Crocker, New Brunswick, N.J., assignor to Industrial Tape Corp., a corporation of New Jersey.

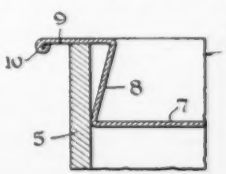
Tension control apparatus comprising in combination means for moving a web in the direction of its length and a tension bar adapted to contact



the web across the width of the web and pivoted on an axis disposed across the web, the bar being rotatable on its axis in response to variation of tension on opposite edges of the web, the portion of the bar midway between the edges of the web coinciding with the axis of the bar and the portion of the bar contacting the web being inclined in opposite directions from the axis whereby rotation of the bar about its axis inclines said last mentioned portion with respect to the normal plane of the web.

2,455,063 — Method of forming metal closures for paper containers. George F. Jackson, Baltimore, Md., assignor to Continental Can Company, Inc., New York, N.Y.

The herein described method of forming a metal end closure on a paper container body which consists in inserting in an open end of a paper container body a metallic end closure



having a central body portion merging into an inwardly and endwise tapered heel and an outwardly turned flange, then bending said flange down over the open end of the body and against the outside wall of the body end in the form of a skirt to dispose said skirt in substantially parallel spaced relation to said heel and clamp the body end portion between said heel and skirt in inwardly and endwise tapering relation to the main body of the container.

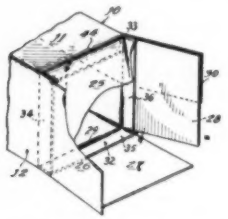
2,455,083—Cellulose ethers of 3,4 epoxy 1-butene and their oxidation products. David M. Musser, Orange, N.J., assignor to Pacific Mills, Boston, Mass., a corporation of Massachusetts.

A method of improving the chemical reactivity of cellulosic fibrous material containing free hydroxyl groups which comprises reacting said material in the presence of an alkali with 3,4-epoxy-1-butene.

The method of treating cellulosic material which comprises reacting said material in the presence of an alkali with 3,4-epoxy-1-butene to form a cellulose ether containing a double bond and thereafter oxidizing said material at said double bond.

2,455,124 — Collapsible container. Henry A. Johnson, Kansas City, Mo.

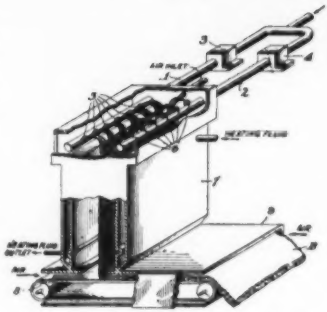
A collapsible paper carton provided with fold lines defining side walls and closure flaps and including outer side walls having integral foldable closure flaps, which closure flaps are defined by slits terminating in spaced relation to the fold line for the closure flaps, an inner lining substan-



tially coextensive with the outer side walls and an intermediate ply coextensive only with the side walls and to which intermediate ply the outer side walls and the lining are adhesively secured, a sealing web integral with the inner lining and spacedly overlapping portions of the closure flaps throughout its length, the free marginal edge of said sealing web being adjacent the terminal ends of the slits between the closure flaps and parallel to the fold line for the closure flaps so that when the closure flaps are folded upon each other the sealing web extends inwardly from each side wall partially across the container.

2,455,174—Free fall fiber. Ira V. Hitt, Waynesboro, Va., assignor to E. I. du Pont de Nemours & Co., Wilmington, Del.

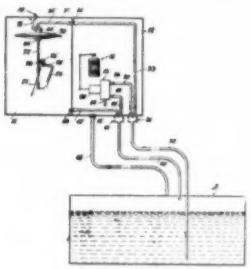
The process of spinning thermoplastic, organic solvent-soluble, filament-forming material to form crimpy filaments substantially free of molecular orientation along the filament axis which comprises extruding an organic solvent solution of said filament-forming material in the form of fine streams upwardly into an evaporative atmosphere under a jet velocity sufficient to project said streams a distance sufficient to permit the setting of said material to the state of self-sustaining filaments and thereafter permitting the set filaments to fall under their own



weight, without subjecting them to added tension, onto a collecting device.

2,455,200 — Liquid level indicator. Charles F. Wallace, Westfield, N.J., assignor to Wallace & Tiernan Products, Inc., Belleville, N. J.

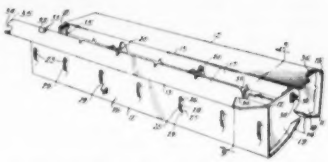
An apparatus for measuring the liquid in a container, comprising a sealed chamber, a pressure gauge having its pressure-responsive ele-



ment mounted in said chamber, a pressure tube for connecting the pressure-responsive element of the gauge with a point below the liquid level in the container the liquid in which is to be measured, a pressure equalizing tube for connecting the sealed chamber with the space in the container above the liquid level, an air pump the pressure chamber of which is connected to each of said tubes through a restricted orifice, and a device for attachment to the container comprising a casing partitioned to provide two sealed trap chambers to one of which the pressure tube connects and to the other of which the pressure equalizing tube connects, a valve body secured in an opening in the bottom of each of the trap chambers and having an air flow opening therethrough, a spring-pressed valve in each of said valve bodies, seating against a seat in the valve body, each valve being fast on a slidably guided valve rod, a tiltable weight in each trap chamber which normally seats on a seat at the top of the valve body and holds the valve open by engagement with the end of the valve rod and when it tilts or moves away from the seat permits the valve to be closed by its spring, and an immersion tube extending from the valve body of the trap chamber to which the pressure tube is connected.

2,455,291—Cellular carton. Leon Benoit, New York, N.Y., assignor, by mesne assignments, to Robert Gair Co., Inc., New York, N.Y.

A cellular carton comprising two foldable



blanks each having flaps hinged along one edge and extensible at right angles within the other blank to form cross walls, a side wall with cross slits corresponding to the cross walls and upper and lower parallel slits extending longitudinally of the side wall in opposite directions from the ends of the cross slits and forming yieldable portions at opposite sides of the cross slits for engaging the cross walls, said side wall having at one end of each lower slit a slit extending angularly from said lower slit to a point approximately in line with the cross slit, forming a yieldable locking tab, a hook shaped lug at the outer edge of each flap insertable through the cross slit in the side wall of the opposite blank and engaged at opposite sides by said yieldable portions and engageable with the locking tab at the bottom of the cross slit, said locking tab retaining the lug in the cross slit.

2,455,427—Process for impregnating wood and composition therefor. William Karl Loughborough, Madison, Wis., assignor to United States of America as represented by the Secretary of Agriculture. (Granted under the Act of March 3, 1883, as amended April 30, 1928; 370 O.G. 757.)

A process for seasoning refractory wood comprising soaking the wood in an aqueous solution containing urea and formaldehyde in the relative molal proportions of about 6 to 4, respectively, said solution being buffered to a pH in the range of about pH 8 to about pH 10.5, followed by drying the treated wood.

As a composition for the chemical seasoning of wood an aqueous solution of 40 to 60 percent by weight of a mixture of urea and formaldehyde in the relative molal proportions of substantially 6 to 4, respectively, said solution being buffered to a pH in the range of substantially pH 8 to 10.5.

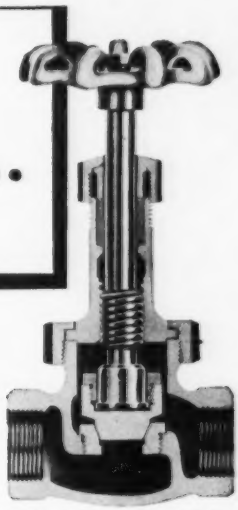
2,455,743—Water dispersible coating vehicle. George E. Eilerman, Milwaukee, Wis., assignor to Pittsburgh Plate Glass Co., a corporation of Pennsylvania.

A process of forming a water-emulsifiable, air drying coating composition from the reaction product of glycerol, rosin and linseed oil, which process comprises treating said product with maleic anhydride at a temperature of about 200° C. for a period of about one hour to form an addendum product therewith, hydrolyzing the product with water by heating to approximately 100 to 130° C. and neutralizing the product with a mixture of sodium silicate and a basic nitrogen compound soluble in water and consisting of ammonia and alkylol amines and morpholine.

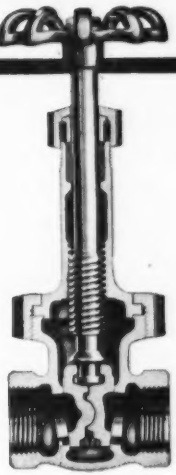
2,454,795 — Polymerization of rosin. Burt L. Hampton, Jacksonville, Fla., assignor, by mesne assignments, to The Glidden Co., Cleveland, Ohio.

The process for polymerizing rosin which comprises the step of treating rosin in liquid phase with a small amount of about 10% of a catalytic material selected from the group consisting of cobaltous chloride and cobaltous bromide, for a time of between about one-half to about 100 hours, at temperatures between about 50°C. and 165°C.

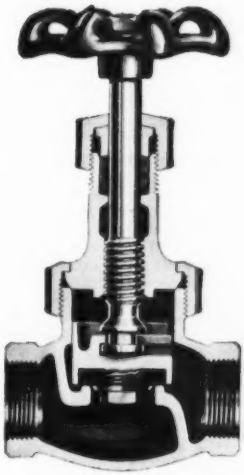
Walworth bronze valves...



Walworth No. 225P Globe Valve
500 Brinell Seat and Disc



Walworth
No. 29 Gate Valve



Walworth No. 95 Globe Valve
Re-New-Disc

built to give dependable trouble-free service on all recommended jobs

Walworth No. 95 Bronze Globe Valves (Angle Type: No. 96) are recommended for service where throttling is not required. They are rated at 150 psi working steam pressure, 500F; 300 psi cold water, oil or gas. The improved renewable disc and lock-on, slip-off disc holder — an original Walworth development—saves time and trouble. This valve can be repacked under pressure when fully opened. All parts are designed to give maximum service and strength.

Walworth No. 29 Bronze Gate Valves are rated at 200 psi working steam pressure, 550F; 400 psi cold water, oil and gas. These valves have rising stems and integral seats. Sizes 2-inch and smaller have union bonnets; sizes 2½ and 3-inch have bolted bonnets. Valves up to and including ¾-inch have solid wedge discs; 1-inch and larger have split wedge discs. These valves can be repacked under pressure when fully opened.

Walworth No. 225P Bronze Globe Valves (Angle Type: No. 227P) are rated at 350 psi working steam pressure, 550F; and 1000 psi non-shock service on cold water, oil and gas. The stainless steel, plug type seat and disc — heat treated to 500 Brinell — can be closed on sand, slag, scale and similar floatage, without injury to the seating surfaces. They are the longest wearing, TOUGHEST bronze valves you can buy.

For full information about Walworth Quality Bronze Valves, see your Walworth distributor, or write:

WALWORTH
valves and fittings
60 EAST 42nd STREET NEW YORK 17, N. Y.

DISTRIBUTORS IN PRINCIPAL CENTERS THROUGHOUT THE WORLD

Trends

Office of the PAPER TRADE JOURNAL, Wednesday, May 4, 1949.

Krona Revaluation

Revaluation of the Swedish krona, for months a matter of conjecture in wood pulp markets here, appears likely to crystallize within 90 days, U. S. Treasury officials stated in Washington last week.

Swedish monetary problems and their relation to Marshall Plan pledges, the subject of Washington conferences between Treasury officials and Swedish representatives, has brought to the open a review of European currencies undertaken by the International Monetary Fund.

Like other participating countries, Sweden has set itself to the task of achieving viability in its foreign trade by 1952, in fulfillment of its pledges under the Marshall Plan, quotes *Business News Letter From Sweden*, quoting speech of Ingemar Hägglöf, Counselor at the Swedish Embassy in Washington, made at the 43rd annual luncheon of the Swedish Chamber of Commerce on March 22. "Until recently, it was possible for Sweden to earn dollars by means of export surpluses to certain overseas markets, especially some of the South American countries. With few exceptions, however, this is no longer possible. Many of the South American countries are now as short of dollars as Sweden itself. . . . In Sweden's exports to the U. S., forest products traditionally constitute the most important part, actually about 80 percent. An increase would of course be desirable, especially in the export of cellulose. But recent developments have proved that the question is rather how Sweden will be able to preserve this exceedingly important market for its pulp. . . . In its long-term program, Sweden has set itself the task of increasing between now and 1952 its exports to the dollar area by about one-third," Mr. Hägglöf said.

Other European Currencies

Any change in European currency valuation has as its goal an increase of exports to provide dollars to pay for imports. With devaluated currencies, U. S. importers could buy European goods for fewer dollars. Conversely, more European currencies would be required to buy the U. S. product, so that foreign exporters might find it difficult to pay for products not given high priority by ECA and by their own governments.

Lively interest in devaluation of the krona and other European currencies exists in U. S. business circles where it is felt that realistic currency values must come. British opposition to devaluation of the pound sterling, which must be involved in any currency devaluation, has brought from Sweden a proposal that the krona be devalued in terms of dollars, but not in terms of the British pound. To devaluate the krona in terms of other currencies, such as Finnish markkas, would make it more expensive for Sweden to buy Finnish timber, and costs of making pulp and paper would rise, making it harder for Sweden to meet U. S. competition.

Although the U. S., as a member of the Monetary Fund, is committed to "orderly" exchange practices, Treasury officials who are inclined to the belief that the important step is to get European currencies on a realistic basis, see merit in the "unorthodox" Swedish plan and anticipate devaluation of the krona within 90 days.

Trade Barriers

Lack of free convertibility of currency is described by Economic Cooperation Administrator Paul Hoffman as the worst of all trade barriers. Addressing the National Conference of Business Paper Editors in Washington, Mr. Hoffman flatly stated that financial stability among ECA participating countries must be achieved this year; and revaluation must precede free convertibility. Though free convertibility between hard and soft currency nations was not forecast by Mr. Hoffman for this year, he said it is hoped for. Between soft-currency nations, free convertibility is expected this year, Mr. Hoffman said.

Export Controls Removed

As another step to promote normal foreign trade, export control covering a range of some 500 commodities was removed by the U. S. Department of Commerce on April 27. The number of items which now can be exported without a validated license is now doubled, Secretary of Commerce Charles Sawyer said in announcing the action. "It is another step in our program of relaxing export controls as rapidly as conditions warrant so that normal foreign trade relations in nonstrategic commodities may be established. All the de-controlled items currently are in free domestic supply. Today's action should facilitate the export of these products and consequently make it easier for foreign buyers to secure from us goods they want," Mr. Sawyer said.

Wider World Trade

Chief impediments to trade arise from unsound conditions and tendencies within the various countries, stated *Guaranty Survey*, monthly review of the Guaranty Trust Company of New York, published last week, and only through correction of those conditions and tendencies can the barriers be removed. "To the extent that agreements result in more reasonable tariff rates and trade regulations, they are steps in the right direction; but a vast amount of work remains to be done to restore freedom of international trade," stated the *Survey*.

Artificial barriers aimed at increasing supply and minimizing expenditure of dollars and other hard currencies, and which employ exchange control, import and export license, quotas, discriminatory bilateral agreements, etc., do not correct causes of so-called dollar shortages, the *Survey* points out. They are aimed at suppressing symptoms, and the overall effect is to throttle world trade as a whole.

"Exchange controls, like direct trade restrictions, are for the most part futile, and for the same reasons. They are similar to trade restrictions also in that they have a strangling effect on world trade because they make it impossible for many countries to obtain adequate amounts of foreign exchange. In their efforts to escape this difficulty, nations enter into bilateral agreements discriminating against outside parties, especially those whose currencies are scarce, such as the U. S. Thus one form of control creates difficulties that lead to another.

"To describe the existing situation as a 'dollar shortage' therefore is rather misleading. It is partly a shortage of goods due to the wartime interruption of normal production and trade, partly a shortage of productive capacity abroad, and partly an unwillingness on the part of those who possess dollars to part with them for the kinds and amounts of foreign currencies that are offered in return. Exchange rates today do not reflect economic realities because most countries have surrounded themselves with economic fences designed to regulate the terms of trade to their own advantage and to insulate their economies from the impact of outside forces," said the *Survey*.

Indexes

Index of general business activity for the week ended April 23 eased to 145.3 from 146.7 in the preceding week, compared with 146.3 in the corresponding week of 1948. Index of paperboard production fell to 157.4 from 164.5 in the preceding week, compared with 188.4 in the corresponding week of 1948.

Comparative ratios of U.S. paper and paperboard production to mill capacity, as reported by AP&PA are:

	Apr. 23 1949	Apr. 16 1949	Apr. 24 1948	Apr. 25 1947	Apr. 26 1946
Paper**	82.3	‡88.3	102.5	105.3	100.6
Paperboard ..	77.3	80.0	102.0	100.0	100.6

** Capacity in tons: 180,061; 1948, 176,055.
‡ Revised.

Paperboard Production (Tons)

	Apr. 23 1949	Apr. 16 1949	Apr. 24 1948
Production	159,884	165,854	190,294
New Orders	156,946	144,710	181,068
Unfilled Orders ..	268,820	276,572	393,044

Percent of Activity, Current 77%; Year, 83%.

THE *Complete* STORY ON THE *Complete* REX LINE

Here's the complete story on the complete Rex line of pulp and paper mill chains. Bulletin No. 48-27 gives you all the facts . . . specifications, dimensions, list prices plus important data on Rex quality features. There's page after page of application photographs . . . interesting views of Rex Chains at work in mills from coast to coast.

It's a book that belongs on your desk . . . an easy reference to simplify your selection and specifications. For your copy, see your local Rex Field Office or write direct to Chain Belt Company, 1605 West Bruce Street, Milwaukee 4, Wis.

CHAIN BELT COMPANY REX

. . . DRIVE AND CONVEYOR CHAINS

Imports

Week Ending April 30

NEW YORK

Newsprint

New York Journal American, Markland, Liverpool, N.S., 570 rolls.
N. Y. Herald Tribune, Markland, Liverpool, N.S., 1715 rolls.
N. Y. World Telegram, Markland, Liverpool, N.S., 71 rolls.
Brooklyn Eagle, Markland, Liverpool, N.S., 432 rolls.
Brooklyn Eagle Press, Inc., Markland, Liverpool, N.S., 60 rolls.
Herald Statesman, Inc., Markland, Liverpool, N.S., 42 rolls.
Washington Post, (Alexandria, Va.), Markland, Liverpool, N.S., 2783 rolls.
Robinson Terminal Warehouse, (Alexandria, Va.), Markland, Liverpool, N.S., 29 rolls.
Washington Daily News, (Alexandria, Va.), Markland, Liverpool, N.S., 196 rolls.

Filter Paper

H. Reeve Angel & Co., Inc., Fort Musquarro, London, 20 cs.
J. E. Bernard & Co., Stockholm, Gothenburg, 8 cs.

Wallpaper

Intramar Shipping Co., American Leader, Havre, 1 cs.
C. A. Haynes & Co., Media, Liverpool, 61 ctns.
American Express Co., Indochinois, Havre, 14 cs., 4 bls.

Serviettes

(———), Welsh Prince, London, 9 cs.
A. C. O. Leather Goods Co., American Miller, Hamburg, 47 cs.

Drawing Paper

H. Reeve Angel & Co., Inc., Fort Musquarro, London, 4 cs.
Natural Nydegger Trading Corp., N. Amsterdam, Rotterdam, 2 cs.
Creative Art Products, American Miller, London, 2 cs.

Napkins

H. W. Robinson Co., Fort Musquarro, London, 3 cs.
H. W. Robinson Co., Jutlandia, Copenhagen, 37 cs.

Towels

H. W. Robinson Co., Fort Musquarro, London, 1 cs.

Tissue Paper

B. F. Drakenfeld & Co., Media, Liverpool, 18 cs. (gauze carbonizing), 2 cs. (pottery).

Crepe Paper

(———), Media, Liverpool, 3 rolls.

Photo Paper

J. J. Gavin & Co., Queen Elizabeth, Southampton, 2 cs.

Writing Paper

The Lafayette Co., Media, Liverpool, 3 cs.

Note Paper

Nordish Transport Inc., Stockholm, Gothenburg, 1 cs.

Wallboard

American Acoustics, Inc., Stockholm, Gothenburg, 2 cs.

Rags, Bagging, Etc.

A. De Vries Trading Corp., Knut Bakke, Antwerp, 65 bls. scrap bagging.
Midwest Waste Material Co., Gudrun Maersk, Antwerp, 153 bls. paperstock.
(———), Fort Musquarro, London, 51 bls. paperstock.
(———), Khedive Ismail, Genoa, 61 bls. heavy bagging, 338 bls. bagging.
E. J. Keller Co., Inc., Khedive Ismail, Genoa, 39 bls. old bagging.
New England Waste Co., Mount Davis, Bombay, 200 bls. cotton waste.
Brandwein Mazur Co., Mount Davis, Bombay, 100 bls. cotton waste.

Casein

American Cyanamid Co., Argentina, Buenos Aires, 1500 bags.

Bone Glue

Transatlantic Animal Byproducts, American Miller, Hamburg, 88 bags.

Woodpulp

Pagel Horton & Co., Inc., Stockholm, Gothenburg, 1 cs.
Elof Hansson, Inc., Stockholm, Gothenburg, 1 pcl., (sulphite).

Foreign Gov't. Purchasing

WASHINGTON — While most of the countries participating in the European Recovery program follow the general practice of utilizing private channels of trade whenever possible, certain purchasing of commodities financed by the Economic Cooperation Administration is done through foreign government purchasing missions or agencies under foreign government supervision, that agency reports.

"The policy of the United States Government favors the use of private commercial channels in international trade. It is recognized that the continuance of certain purchasing activities by foreign government agencies may be necessary to bring about reconversion of world economies and to meet essential civilian needs. The Economic Cooperation Administration urges that such missions use normal trade channels to the maximum extent practicable and that their purchasing should be in accord with commercial considerations," ECA states.

The following information about purchasing missions and agencies under government supervision functioning under ECA-financed programs was submitted by appropriate representatives of the participating countries:

Agency: Paper Control, Board of Trade, Oxford Street Chambers, Oxford road, Reading, England. Purchases woodpulp for paper.

Agency: Joint Export-Import Agency (French Zone Branch Office), Hotel Baeren, Lichtenthal, Baden-Baden (Germany). All purchasing for the French Zone is consummated in Baden-Baden. U.S. exporters should direct all inquiries to this office.

U. S. IMPORTS WOODPULP

Preliminary, March, 1949

Item	Country of Origin	Short Tons
Mechanical		
Unbl'chd.	Canada	13,784
Screenings	Canada	397
Chemical		
Sulfite, Unbl'chd.	Canada	24,517
	Sweden	4,085
	Finland	162
		28,764
Screenings	Canada	367
Sulfite, Bl'chd., Rayon & Sp. Chem. Grades	Canada	17,376
	Sweden	1,120
		18,496
Other	Canada	20,024
	Sweden	661
	Norway	644
	Finland	47
		21,376
Sulfate, Unbl'chd.	Canada	11,516
	Sweden	457
	Finland	1,486
		13,459
Sulfate, Bleached	Canada	26,349
	Sweden	1,341
		27,690
Soda Unbl'chd. & Bl'chd.	Canada	2,352
Totals, March	Canada	116,682
	Sweden	7,664
	Norway	1,695
	Finland	644
		126,685

Air-Lift Bags

WASHINGTON—U.S. Air Force announced April 29 a paper time-saving device in the dramatic Airlift operations. Rhein/Main personnel have hit upon the paper bag idea which cuts the "time of the loading operation, aids the German economy, and keeps crewmembers and leaders infinitely cleaner." The idea originated with Transportation Corps personnel in Germany.

Formerly, Airlift personnel used burlap bags. They were expensive, awkward to carry and stack, and leaked enough coal soot to blacken thoroughly all people working around them.

Now the TC is using 55-pound and 77-pound cube-shaped paper bags.

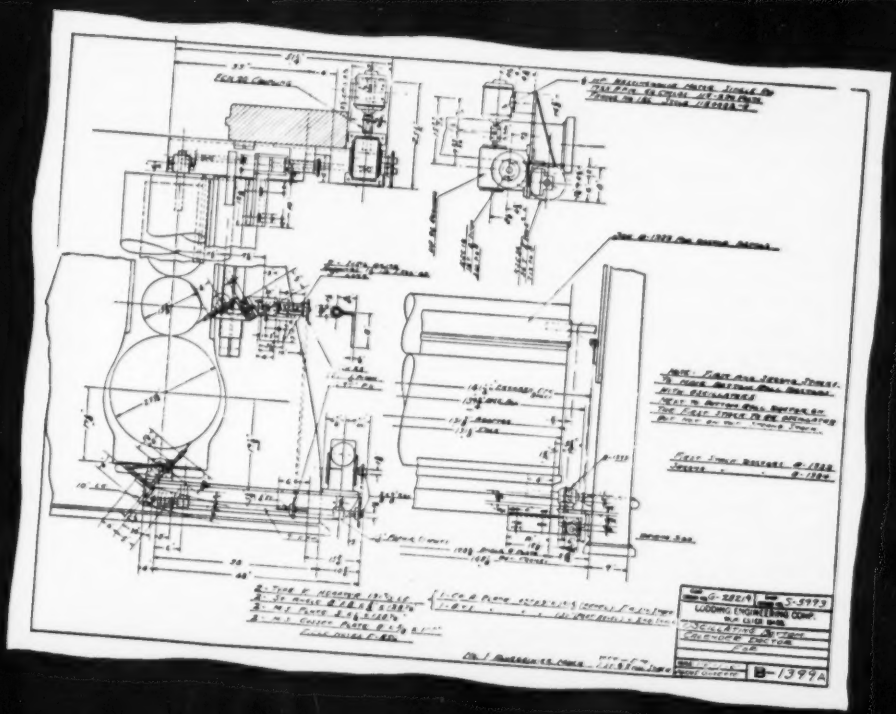
Under the new system, two bags can be carried by one man. They also may be handed easily from person to person. Where formerly it took 30 minutes to load 10 tons into a C-54 with the ungainly burlap, now it takes but 20 minutes.

The paper bag may be used only once. Its cost is 15 cents. The burlap bag cost 70 cents and was used three times. Duffle bags, with which authorities experimented for some time, cost $2.70 and was good for only 20 trips.

U.S. A. F. authorities estimate a considerable savings from the switch to paper bags.

Mass. Employment

Employment in the Massachusetts paper industry during the period from March 1948 to March 1949 showed a decline of nine percent according to statistics released by the state's Department of Labor and Industry. The most recent months covered by the report, February to March 1949, had a drop of 2.5 percent. This decline was common to nearly all manufacturing industries in the state. Most have experienced contraction of employment, with textile manufacturer being especially hard hit. Massachusetts paper industry now employs over 31,000 persons.



ENGINEERED by LODDING

Doctors are important.

You can only afford the best — *custom designed* and *built* by Lodding Engineering Corporation, Worcester, Massachusetts. Represented outside New England by W. E. Greene Corporation, Woolworth Building, New York.

Prices

The prices below reflect general market quotations applying to those standard grades in which the heavy volume of business is being done.

NEW YORK

Paper

Delivered New York

Standard News, per ton—

Rolls, contract	$100.00/ —
Sheets	115.00/ —

F.o.b. mill, varying freight allowances. Zone 1

Kraft—per cwt., 40# base wgt.

No. 1 Wrapping Rolls	$7.75/$8.00
No. 1 Wrapping Sheets	8.25/ 8.50
Standard Wrapping Rolls	**7.00/ —**
Standard Wrapping Sheets	**7.50/ —**
Standard Bag	9.50 —
Multiwall Bag, 40# and heavier, 24x36 (500 sheets)	
Southern	7.50/ 7.75
Northern	**8.85/10.15**

Tissues—per ream 24x36 (480) 10/11 lbs. 2500 lbs. or more

Wh. No. 1 Frd.	$1.60/$1.70
Wh. No. 1 M. G.	1.60/ 1.80
Wh. No. 1½	1.55/ —
Wh. No. 2	1.40/ 1.45
Kraft Anti-Tar	1.45/ 1.62
Kraft Unbl.	1.75/ —
Shrd. Wh. No. 1 per lb.	.11½/ —

Toilet—per case of 100 rolls—1 M sheets.

Unbleached 4½x4½	$6.80/ —
Unbleached 4½x5	5.85/ —
Bleached 4½x4½	7.70/ —
Bleached 4¼x5	8.00/ 8.80
Per Case of 50 rolls—1500 sheets	
Unbleached 4½x4½	$3.50 —
Per Case of 50 rolls—2000 sheets	
Unbleached 4½x4½	6.70/ —
Bleached 4½x4½	7.40/ —

Paper Towels—per case of 3750—Zone 1.

Wh. Jr. M'tif'd 9¼x9¼	$5.45
Br. Sr. M'tif'd 10x12	5.80
Br. Jr. M'tif'd 9½x9¼	5.50
Br. Jr. Sgl. fold 10x10¼	5.55

Manila, per cwt.

No. 1 Jute Tag, sheets*	$15.05/ —
Reg. Jute M.F. Manila, sheets*	13.50/ 15.50
No. 1 Manila Wrapping	8.75/ 10.50
Printing Manila	10.00/ 11.00

* Less usual allowance for rolls.

Boards, per ton—

Filled News	$77.50/ —
Plain Chip	75.00/ —
Blchd. Mla. Ld. Chip*	97.50/ —
White Pat. coated*	115.00/
Kraft Liners 42 lb.	105.00/
Kraft Corr. .009	110.00/
Binders Boards	120.00/126.00

* Base Prices per 10 tons. Less than 10 tons but over 3 tons, add $2.50; three tons or less, add $5; regular 35-39 basis, add $5; basis 40-49, add $2.50; basis 91-100, add $2.50; basis 101-120, add $5.

World Wood Pulp Markets

Second Quarter Contract Prices, Per Short Air-Dry Ton

	Delivered, with varying freight allowances		On dock Atlantic Ports Varying freight allowances		
	U. S.	Canadian	Swedish	Finnish	Norwegian
Groundwood	$75.00/ —	$75.00/ —			
Siderums Pulping News		80.00/ 90.00			
Soda, Bleached	125.00/ —	125.00/ —		Competitive	
Sulphate, Bleached	$132.50/136.50	136.00/140.00	$130.00/140.00		
Sulphate, Unbl'd North'n	105.00/ —	105.00/ —	105.00/112.50	with	
Sulphate, Unbl'd South'n	85.00/ 95.00				
Sulphite Blchd. (S'ftw'd)	126.00/ —	130.00/135.00	130.00/132.50	Canadian	$125.00/ —
Sulphite, Blchd. (H'dw'd)	125.00/ —				
Sulphite, Unbleached	115.00/ —	118.00/ —	$110.00/118.00	Grades	
Sulphite, Unbl'd (Glassine)	121.50/ —	122.00/ —	122.00/127.50		

‡ Southern. ‖ Flat: no freight allowed.

Waste Paper Market

Prices to Mills. Quotations Nominal

F.O.B. Shipping Point (Per Ton)

	New York	Philadelphia	Boston	Chicago
	May 4	Apr. 30	Apr. 30	May 2
No. 1 Mixed Paper	$5.00/ —	3.00/ 4.00	$4.00/ $6.00	$5.00/ —
Boxboard Cuts	6.00/ 7.00	3.00/ 4.00	12.00/ —	7.00/ —
Mill Wrappers	12.00/ 14.00	8.00/ 10.00	15.00/ —	7.00/ —
No. 1 News	10.00/ 11.00	5.00/ 7.00	— / 9.00	11.00/ —
Over-issue News	15.00/ 16.00	10.00/ 12.00	11.00/ 12.00	14.00/ —
Corrugated Containers	11.00/ 12.00	7.00/ 8.00	10.00/ 11.50	12.00/ —
New Corrugated Cuts	15.00/ 16.00	10.00/ 12.00	16.00/ —	15.00/ —
Double Kraft Ld. Corr. Cuts	25.00/ —	20.00/ —	25.00/ —	30.00/ —
Used Kraft Bags	25.00/ —	15.00/ 17.00	14.00/ 18.00	15.00/ —
No. 1 Brown Kraft Paper	nominal	20.00/ —	25.00/ —	15.00/ —
Super Resorted Br. Kraft	30.00/ 35.00	30.00/ 32.00	40.00/ —	30.00/ —
New Br. Kraft Env. Cuts	65.00/ 70.00	60.00/ 65.00	60.00/ 65.00	50.00/ —
New Br. Kraft Cuts	45.00/ 50.00	55.00/ 60.00	45.00/ —	45.00/ —
No. 1 Gdwd. Shvs.	20.00/ 25.00	12.00/ 16.00	25.00/ —	21.00/ —
White Newsblanks	55.00/ 60.00	60.00/ 65.00	— / 60.00	35.00/ —
No. 1 Flyleaf Shvs.	30.00/ 35.00	15.00/ 20.00	35.00/ 40.00	30.00/ —
No. 1 Soft Wht. Shvs.	65.00/ 70.00	60.00/ 65.00	70.00/ 80.00	55.00/ —
Super Soft Wht. Shvs.	85.00/ 90.00	75.00/ —	80.00/110.00	65.00/ —
Hd. Wht. Shvs.	80.00/ 85.00	70.00/ 75.00	80.00/ —	80.00/ —
Hd. Wht. Env. Cuts	95.00/100.00	90.00/ 95.00	90.00/105.00	90.00/ —
New Manila Env. Cuts	60.00/ 70.00	60.00/ 65.00	60.00/ 70.00	55.00/ —
Col. Tab Cards	25.00/ 30.00	20.00/ 25.00	— / —	20.00/ —
Manila Tab Cards	60.00/ 65.00	55.00/ 60.00	65.00/ 75.00	50.00/ —
No. 1 Mixed Ledger	30.00/ 32.50	25.00/ 30.00	37.50/ —	30.00/ —
White Ledger	35.00/ 40.00	35.00/ —	45.00/ 50.00	35.00/ —
Mixed Books & Mags.	7.00/ 8.00	5.00/ 6.00	12.00/ —	5.00/ —
No. 1 Rep'd Hvy. Books & Mags.	15.00/ 17.00	8.00/ 10.00	22.00/ 23.00	20.00/ —

The following prices are representative of distributors' resale prices, all deliveries in Zone 1:

Rag Content Bonds and Ledgers—

White, 20 lb.

Bonds,

	4 Ctns. per cwt.
100% Rag Ex. No. 1	$51.40/$53.90
100% Rag	44.55/ 46.15
75% Rag	33.90/ 35.40
50% Rag	28.10/ 29.55
25% Rag	24.85/ 26.80

Ledgers,

	4 Ctns. per cwt.
100% Rag Ex. No. 1	$52.65/$54.55
100% Rag	45.65/ 46.40
75% Rag	35.15/ 36.10
50% Rag	29.40/ 30.05
25% Rag	26.15/ 26.80

Sulphite Bonds and Ledgers

White, 20 lb.

Bonds,

	4 Ctns. per cwt.
No. 1	$18.35/ —
No. 2	17.50/ 18.80
No. 4	16.80/ 17.45

Ledgers,

	4 Ctns. per cwt.
No. 1	$19.65/ —
No. 2	18.80/ —
No. 4	18.10/ —

White Book,

	Case
Conversion Coated	per cwt.
No. 1	$20.75/$20.90
No. 2	19.50/ 19.65
No. 3	18.15/ 18.90
Machine Coated	
No. 1	16.40/ 17.00
No. 2	14.90/ 16.50
Uncoated	
No. 1 Antique (Watermarked)	16.40/ 17.90
Offset	15.15/ 17.15
A Grade E. F.	15.40/ —
A Grade S. C.	15.90/ 16.15
B Grade E. F.	14.90/ 15.15
B Grade S. C.	15.40/ 15.65

Twines

All Prices Nominal, F.o.b. Mill

(Soft Fiber)	
Coarse Polished—India	.35½/ .36½
Fine Polished India	.41½/ .45
Unpolished—Paper Makers	.32¼/ .34½
Tube Rope	.33¼/ .35½
Wrapping	.36 / .38¼
Cotton	.58 / .60
Polished Cotton	.55 / —
(Hard Fiber)	
Mex. Sisal	.21 / .27
(American Hemp)	
Polished Hemp	.46½/ .48
Unpolished	.35 / .37¼

Rag Market

New Domestic Cotton Cuttings

(Prices to Dealers, F.o.b. Ship. Pt.)

	Per 100 lbs.
White Shirt	$10.00/ $10.50
Unbleached Muslin	10.00/ 10.50
Light Silesias	7.00/ 7.50
White Back Blue Overalls	6.25/ 6.50
Blue Overalls	6.00/ 6.25
Fancy Shirt	4.50/ 5.00
Percales	5.50/ 6.00
Light Prints	5.50/ 6.00
No. 1 Washables	**3.00/ 3.25**
Bleachable Khaki	5.00/ 5.50
Unbleachable Khaki	4.50/ 5.00
Cotton Ducks	4.25/ 4.75
Lt. Flannelettes	7.00/ 7.50
Men's Corduroy	3.50/ 4.00
Women's Corduroy	3.00/ 3.50
No. 1 Whites, Repacked	**$4.25/ $4.75**
No. 1 Whites, Miscellaneous	3.50/ 4.00
No. 2 Whites, Repacked	2.75/ 3.00
No. 2 Whites, Miscellaneous	**2.00/ 2.25**
Cotton Pants & Overalls	2.75/ 3.00
Thirds and Blues, Repacked	2.25/ 2.50

(Continued on page 32)

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Prices

CONTINUED FROM PAGE 30

Old Domestic Cotton Rags

(Prices to Dealers, F.o.b. Ship. Pt.)

	Per 100 lbs.	
No. 1 Roofing Rags	1.40/	1.50
No. 2 Roofing Rags	1.25/	1.35
No. 3 Jute Bagging	.95/	1.05
No. 4 Brussels & brd. Bek'd crpts.	.90/	1.00
Roofing Bagging	.80/	.95

New Foreign Cotton Cuttings

(Prices to Dealer, F.o.b. Dock, N. Y.)

	Per 100 lbs.
New Dark Cuttings	prices are nominal
New Mixed Cuttings	
Light Silesian	
Light Flannelettes	
New White Cuttings	
New Unbleached Cuttings	
Fancy Shirt Cuttings	
Light Prints	
Bleachable Khaki, No. 1	
Unbl. Khaki, No. 1	

Old Foreign Rags

(Prices to Dealer, F.o.b. Dock, N. Y.)

	Per 100 lbs.
No. 1 White Cottons	prices are nominal
No. 2 White Cottons	
No. 3 White Cottons	
No. 4 White Cottons	
Extra Light Prints	
Old Light Prints	
Med. Light Prints	
Dutch Blue Cottons	
Checks and Blues	
Linsey Garments	
Dark Cottons, European	
Dark Cottons, Egyptian	
Old Shopperies	
New Shopperies	

Bagging

(Prices to Dealers, f.o.b. N. Y.)

	Per 100 lbs.	
Foreign Gunny, No. 1	$7.50/	$8.00
Domestic Gunny, No. 1	7.50/	8.00
Heavy Wool Tares	6.50/	7.00
No. 1 Scrap Bagging	4.75/	5.00
Foreign Manila Rope	5.50/	5.75
Domestic Manila Rope	5.50/	5.75
Jute Strings	6.25/	6.50
No. 1 Sisal Strings	5.00/	5.25
Mixed Strings	1.15/	1.30

PHILADELPHIA

Domestic Rags (new)

(F.o.b. Eastern Shipping Point)

	Per 100 lbs.	
White Shirt	$10.25/	$10.50
Light Silesias	6.75/	7.00
Unbleached Muslin	10.00/	10.25
Light Prints	5.25/	5.50
Washable No. 1	3.00/	3.50
Blue Overall	6.00/	6.25
Percales	5.50/	5.75
Unbleachable Khaki	4.00/	4.25
Bleachable Khaki	5.25/	5.50
Men's Corduroy	4.25/	4.50
Ladies' Corduroy	4.00/	4.25
Cottonades	4.25/	4.50
Fancy Shirts	5.25/	5.50

Domestic Rags (old)

(F.o.b. Eastern Shipping Point)

	Per 100 lbs.	
Mixed White	$3.50	$3.75
Thirds and Blues Repacked	2.50/	2.65
Cotton Pants & Overalls	3.00/	3.25
No. 1 Roofing Stock	1.05/	1.15
No. 2 Roofing Stock	1.00/	1.05
Roofing Bagging	.75/	.90

Bagging

(F.o.b. Eastern Shipping Point)

	Per 100 lbs.	
Old Manila Rope	$5.50/	—
Foreign Gunny No. 1	8.00/	—
Domestic Gunny No. 1	8.00/	—
Sisal Strings No. 1	3.75/	—
No. 1 Scrap	5.50/	—
No. 1 Jute Rope	6.00/	6.50

BOSTON

Bagging

(F.o.b. Boston)

	Per 100 lbs.	
Foreign Gunny	7.50	/ 8.00
Domestic Gunny	8.25	/ 850.
Domestic No. 1 Old Rope	6.00	/ 6.25
Foreign No. 1 Old Rope	6.50	/ —
Mixed Strings	1.35	/ —
Transmission Rope—Domestic	3.00	/ 3.50
Jute Carpet Threads	—	/ 4.00
Bleachery Burlap	—	/ 9.00
Scrap Burlap—		
Foreign	6.50	/ 7.00
Domestic	6.00	/ 6.50
South America	6.50	/ 7.00
Austr. Wool Pouches	8.25	/ —
New Zealand Wool Pouches	—	/ 6.00
New Burlap Cuttings	8.50	/
Heavy Baling Bagging	—	/ 7.50
Paper Mill Bagging	—	/ 6.75

Domestic Rags (New)

(F.o.b. Boston)

	Per 100 lbs.	
New Light Prints	5.75	/ 6.00
Fancy Percales	6.00	/ 6.25
White No. 1 Shirt	10.25	/10.75
Light Flannelettes	—	/ 7.00
Canton Flannels, Bleached	—	/ 9.00
Underwear Cutters, Bleached	10.75	/11.00
Underwear Cutters, Unbleached	10.00	/10.25
Blue Overalls	6.25	/ 6.75
Soft Unbleached	10.00	/10.75
Blue Cheviots	6.00	/ 6.50
Fancy Shirt	5.00	/ 5.25
Washable	3.25	/ 3.50
Khaki Cuttings	5.00	/ 5.25
Men's Corduroy	4.50	/ —
Khaki Canvas	—	/ 5.50
B. V. D. Cuttings	10.00	/10.25

Domestic Rags (Old)

(F.o.b. Boston)

	Per 100 lbs.	
No. 1 Whites, Repacked	$3.50	/$4.00
No. 1 Whites, Miscellaneous	3.00	/ 3.50
Twos and Blues, Repacked	—	/ 2.00
Cotton Pants & Overalls	2.75	/ 3.00
No. 1 Roofing Stock	—	/ 1.30
No. 2 Roofing Stock	—	/ 1.20
Roofing Bagging	—	/ .90

Markets

Blanc Fixe

Supply ample. Prices firm. Currently quoted at $85.00 in bags, car lots, at works, 6 cents per pound, l.c.l., deld. By-product supply somewhat restricted. Quoted at $77.50 per ton, car lots, at works, 6 cents per pound, l.c.l., deld.

Bleaching Powder

Steady improvement in supply. Demand and prices steady. Prices range from $4.25 to $4.75 per 100 pound drums, l.c.l., works.

Casein

Heavy U. S. Govt. buying of milk products has no effect on weak casein market. Prices nominal. Buying dull. Current prices on processed acid precipitated casein at 19 to 24 cents per pound for domestic grades and 19 to 21½ cents for imported grades, f.o.b. shipping point, car lots.

Caustic Soda

Supplies available for prompt shipment. Carload prices firm. L.c.l. sales reported at competitive levels. Solid caustic is reported at $3.05 per cwt. flaked and ground is quoted at $3.45 per cwt., in 400 pound drums, $3.95 per cwt. in 100 pound drums—car lots at works; liquid 50 percent in tank cars at $2.40 per cwt.; liquid 73 per cent in tank cars at $2.50 per cwt., at works.

China Clay

Demand easier, supply of domestic and imported ample. Prices firm. Domestic filler quoted at $10 to $12.50 per ton, car lots, f.o.b. mines. Coating clay is $15 to $25. Imported clay quotation, short tons, $16 to $35, export warehouse.

Chlorine

Supply condition favorable. Seasonal pickup in demand due. Demand moderately strong. Prices firm. Currently quoted at $2.40 per cwt. in single unit tank cars; at $2.70 to $3.90 per cwt. in multi-tank cars, f.o.b., works.

Rosin

Boost in support level ups prices. Demand dull. Gum rosin in drums per 100 pounds net in car lots, f.o.b., Savannah; B, G, H, I, K, $6.38, Savannah; B, $4.25; FF, $5.50.

Rosin Size

Price advanced with rosin market. Supply good. Demand steady. Seventy percent gum and pale wood grades, tank cars, $5.45 to $5.55 f.o.b. southern shipping point.

Salt Cake

Price eases $2.00 to $3.00 a ton. Pickup in demand noted at moderate level. Domestic quoted at $25.75, f.o.b. shipping point, freight allowed to destination.

Soda Ash

In free supply. Demand easier. Carload prices firm. Some competitive cutting noted in l.c.l. lots. Current prices, car lots per 100 pounds; in bulk, $1.15; in paper bags, $1.40; and in barrels, $1.90.

Sodium Bicarbonate

Supply ample. Demand good. Prices firm. Reported at $1.95 per cwt. paper bags, carload lots.

Starch, Corn

Notice of 15c price advance effective May 9 brings spurt in orders of one processor. Demand fair. Supply ample. Pearl grade currently quoted at $4.67 per 100 pounds; powdered starch at $4.78 per 100 pounds; car lots, f.o.b. Chicago.

Starch, Potato

Steady paper mill demand. Maine price firmed by Govt. purchases. Supply in Maine ample. Idaho mills out of market. Available ex-warehouse. High grade quoted at $7.00 cwt., ex. N. Y. whse.; $4.75 f.o.b. Maine; Pearl grade, $4.90 cwt. f.o.b. Maine.

Sulphate of Alumina

Supply good. Demand steady. Prices firm. The commercial grades are quoted from $1.50 per 100 pounds, in bags, car lots, f.o.b. works. Iron free is $2.50 per 100 pounds in bags, car lots, at works.

Sulphur

Demand sustained at good level. Supply good. Prices firm. Annual contracts are quoted at $18 per long ton, f.o.b. mines; $19.50, f.o.b. vessels, Gulf ports. Export price f.o.b. Gulf ports is $22.00 per long ton.

Talc

Prices steady. Demand continues ahead of supply. Improvement due this year. Domestic grades are currently quoted at $23 per ton in paper sacks, f.o.b. mills; Canadian at $35 and up per ton. All prices in car lots.

Tapioca Flour

Supplies tighter on all grades. Demand fair. Prices steady. Superior high range from $10.50/$11.50 cwt.; high grades $9.50 cwt., on dock Atlantic and Gulf ports; medium grades range from $6.65/$7.50 cwt. on dock, N. Y.

Titanium Dioxide

Supply reported now in balance with eased demand. Prices firm. Anastase 19½c pound carload lots, 20c l.c.l., rutile, 21½c pound carload lots, 22½c l.c.l.; 50-pound bags, f.o.b. plant, actual freight allowed.

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Financial Record

	Per Share Earnings		Indic.	May 3
	Calendar Year 1947	Calendar Year 1948	Annual Divid. Rate	Approx. Market Price
Preferred Stocks				
Armstrong Cork Co. $3.75 Cum.	$38.64*	$46.33*	$3.75	94⅜
Armstrong Cork Co. $4.00 Cum. Conv.	38.64*	46.33*	4.00	106⅜
Celotex Corp. 5% Cum.	24.25c	21.22g	1.00	16⅜
Champion Paper & Fibre $4.50 Cum.	65.90f	61.80j	4.50	95⅝
Container Corp. of Amer. 4% Cum.	102.74	104.24p	4.00	97⅛
Crown Zellerbach $4.20 Cum.	56.40f	63.54g	4.20	96¾
Crown Zellerbach $4.00 Cum. Conv. 2nd	53.96f*	60.21g*	4.00	94⅛
Dixie Cup Co. $2.50 Cum. Conv. Cla	9.16	11.71p	2.50	52¼
Flintkote Co. $4 Cum.	81.91	74.66p	4.00	99⅝
Robert Gair Co., Inc. 6% Cum.	20.11	15.96p	1.20	16⅜
International Paper Co. $4 Cum.	236.51	263.00	4.00	95¾
Johns-Manville $3.50 Cum.	128.81	217.72p	3.50	104⅝
Kimberly Clark Corp. 4½% Cum.	70.03	80.74	4.50	103¾
Kimberly Clark Corp. 4% Cum. Conv. 2nd	41.60*	41.59*	4.00	98⅞
MacAndrews & Forbes 6% Cum.	62.20	62.23	6.00	138½
Mead Corp. 4¼% Cum.	81.56	73.46	4.25	73
Mead Corp. 4% Cum. Conv. 2nd	33.30*	29.91*	2.00	31⅜
Paraffine Cos. Inc. 4% Cum. Conv.	152.76a	158.51p	4.00	103⅝
Rayonier Inc. $2 Cum.	13.58	16.43	2.00	30⅜
St. Regis Paper Co. 4.40% 1st A	76.93	68.10p	4.40	85½
Scott Paper Co. $3.40 Cum.	43.95	66.09p	3.40	96
U. S. Gypsum Co. 7% Cum.	211.34	314.18p	7.00	182¼
United Wallpaper Inc. 4% Cum. Conv.	(d)1.35a	15.44p	2.00	24⅛
West Virginia Pulp & Paper 4½% Cum.	75.75c	81.01g	4.50	105½
Common Stocks				
APW Products Co.	$1.24	$0.73	$0.25	3⅛
American Writing Paper Corp.	1.61	(d)0.15p	0.25	5½
Armstrong Cork Co.	6.41	7.54	3.00	39⅛
Celotex Corp.	6.59c	5.73g	2.00	19¼
Certain-Teed Prods. Corp.	3.75	4.02	1.15	11
Champion Paper & Fibre	5.57f	6.09j	2.00	21⅜
Congoleum Nairn Co.	4.55	5.78	2.25	26⅜
Container Corp. of America	10.09	9.98c	4.50	33⅛
Crown Zellerbach	6.81f	7.26g	2.00	23½
Dixie Cup Co.	5.87	8.11p	1.00	29
Eastern Corp.	5.02	4.76	1.00	10¾
Flintkote Co.	6.27	5.13p	2.50	23½
Robert Gair Co., Inc.	3.18	2.48p	0.70	6
Great Northern Paper Co.	4.56	4.63	2.80	35⅜
International Paper Co.	15.02	16.73	5.00	47⅛
Johns-Manville Corp.	3.17	5.42p	2.00	33¼
Kimberly-Clark Corp.	4.29	5.02	1.65	18⅞
MacAndrews & Forbes Co.	3.68	3.68	2.50	31½
Marathon Corp.	3.39c	4.08g	1.40	21¼
Mead Corp.	7.33	6.36	2.00	15¾
National Container Corp.	4.13	2.28	0.80	7⅝
Paraffine Cos. Inc.	2.40g	2.49p	1.20	17⅜
Rayonier, Inc.	7.30	9.09	2.00	22½
Ruberoid Co.	9.89	11.80	3.25	43½
St. Regis Paper Co.	2.66	2.27p	0.80	7⅝
Scott Paper Co.	3.02	4.68p	2.50	53¼
Sutherland Paper Co.	6.87	5.63	2.50	33
Taggart Corp.	1.29	1.08	0.60	10⅜
Union Bag & Paper Corp.	7.93	8.21p	4.00	24⅝
United Board & Carton	4.95b	0.73h	(e)	5⅜
U. S. Gypsum Co.	10.00	15.03p	6.00	92½
United Wallpaper	(d)0.11a	10.42p	(n)	3⅝
West Virginia Pulp & Paper	11.40c	11.51g	4.00	37⅛

(a) Year ended 6/30/48
(b) Year ended 5/30/48
(c) Year ended 10/31/47
(d) Deficit
(e) Omitted dividend 2/4/49
(f) Year ended 4/30/48
(g) 12 months to approximately 1/31/49
(h) 12 months to 2/5/49
(j) 8 months to 12/31/48
(n) Last payment 25c, 9/16/47
(p) 12 months to approximately 3/31/49
(*) Earnings per combined preferred shares.

Dividends Declared

Oswego Falls Corp. has declared a quarterly dividend of 25 cents a share on its common stock, payable April 30 to stock of record of April 22, and a quarterly dividend of $1.12½ on its 4½ percent cumulative preferred, payable July 1 to stock of record June 15.

S. D. Warren Co. has declared a dividend of 35 cents per share on its common stock, and one of $1.13 per

share on its $4.50 cumulative preferred, both payable on June 1 to holders of record on May 14.

U. S. Playing Card Co. has declared an extra dividend of 50 cents and a regular quarterly dividend of 50 cents on its common stock, both payable July 1 to holders of record June 15. An extra of $1.50 was paid April 1.

Mead Corp. has declared regular quarterly dividends on two issues of its preferred stock ($1.06¼ on 4½ percent cumulative preferred payable June 1 to holders of record May 6, and 50 cents on 4 percent cumulative second preferred payable June 1 to holders of record May 6) and a 50 cent dividend on its common stock, payable June 1 to holders of record May 6.

Marathon Corp. has declared a quarterly dividend on both its common and preferred stock. The common dividend of 35 cents a share is payable May 31 to holders of record May 10. The preferred of $1.25 a share is payable July 1 to holders of record June 20. Amounts of both dividends are net after provision for Wisconsin privilege dividend tax.

Continental Can Co., Inc., has declared a second-quarter interim dividend on its common stock of 25 cents a share, payable June 15 to stockholders of record May 25. At the same time directors declared a regular quarterly dividend on the $3.75 cumulative preferred stock of 93¾ cents a share, payable July 1 to holders of record June 15.

Scott Paper Co. has declared a quarterly dividend of 62½ cents per share on its outstanding common stock, payable June 13 to holders of record on May 27, and a regular quarterly dividend of 85 cents per share on its outstanding $3.40 cumulative preferred shares, payable August 1 to holders of record on July 15.

New Donnaconna Control

OTTAWA — A controlling interest in the Donnacona Paper Co., Ltd., having head offices in Quebec City, has been obtained by Howard Smith Paper Mills, Ltd. During 1948 the Howard Smith firm had purchased 150,250 common shares of Donnacona at an indicated cost of $3,437,949, including 37,750 shares purchased from the Dominion Tar & Chemical Co., Ltd., for $993,088 payable before January 5, 1950. Since the turn of the year this investment was increased by the purchase of additional shares, now giving the company "practically a controlling interest" in Donnacona, according to the president of Howard Smith Paper Mills, Ltd., Howard Smith. Donnacona has an outstanding common capital of 376,572 shares and a controlling interest of more than 50 percent would represent 188,286 shares.

Mead Reelects All

DAYTON, O.—All officers and directors of the Mead Corp. were reelected for the coming year when the stockholders held their annual meeting in company offices here on April 26.

Renamed president was C. R. Van de Carr Jr. Other officers reelected are George H. Mead, honorary chairman of the board; Sydney Ferguson, chairman of the board; J. O. Mason, executive vice-president; H. E. Whitaker, vice-president in charge of operations; Alan G. Goldsmith, D. F. Morris, R. H. Savage, Al H. Mahrt, and Speed Warren, vice-president; George Robinson, treasurer; Murray Smith, secretary; and J. H. Cunningham, comptroller.

Reelected directors were George H. Mead, Sydney Ferguson, C. R. Van de Carr Jr., Charles S. Cheston, C. W. Deeds, Clarence Francis, E. T. Gardner, Alfred W. Jones, C. F. Kettering, H. Gates Lloyd, Al H. Mahrt, J. O. Mason, H. T. Mead, M. N. Smith, Murray Smith, H. E. Talbott and N. S. Talbott.

Texas Charter

SAN ANTONIO, Tex.—The Shiner-Sien Paper Co., has amended its charter, converting 500 shares of par value $100 each, ($50,000) into 500 npv shares increasing capital stock to 2,000 npv shares.

If you bet on the horses, the odds are against you. Be *sure* the odds are with you. Buy The DRAPER FELT.

The DRAPER Felt

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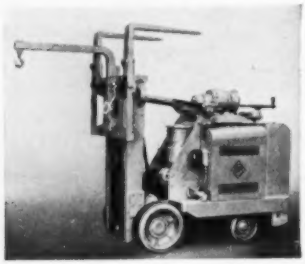
Equipment & Supplies

Fork-Boom Unit

The fork and boom unit is a loading truck attachment designed to permit quick driver-conversion from fork to boom without special tools. Adapted particularly to plants where loads are



heavy or vary in size and shape, the attachment also is useful in lighter industries which generally use fork trucks but have need at times for moving goods or equipment best carried by means of rope or cable-sling suspended from a boom. For jobs requiring extra security in handling, fork and boom can be used together. Device has three main parts: base member attached to truck's lifting mechanism which rides in upright tilting columns; fork tines suspended from bar supported on the base; and boom — described as a solid, alloy-steel heat-treated bar, bent at right angles near the middle of its length. Part which engages the base is machined for a sliding fit into brackets and base socket, where it is held vertically and firmly in place. When forks are to be used alone, boom is detached by slipping out of holder. Where boom is required by itself, fork tines are swung upward and backward and held in this reversed position by means of pins in brackets at top of back-base. Tines clear truck mechanism at any working height. In model illustrated, boom extends 36 ins. horizontally from base; fork tines are 36 ins. long; max. height of lift of boom hook from floor is 30 to 145 ins.; max. height of fork is 117 ins.; rated capacity of truck, 4000 lbs. For details and prices write to Ellwell-Parker Electric Co., Cleveland, Ohio.

Ameran Resin Pastes

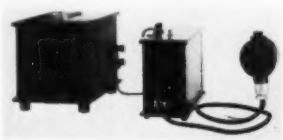
Ameran resin pastes are announced as a new series of *plastisols*—defined as "dispersion of resin and other compounding materials in a plasticizer containing no volatile organic liquids as diluent. Designed to make available to processors plastisol compounds free from entrapped air, the bubble-free resin pastes are said to eliminate one big processing headache, also the need for expensive solvents and a cumbersome recovery system, since there is no fire or toxic fume hazard present. For details and prices write to American Anode, Inc., 60 Cherry street, Akron, Ohio.

Belt Booster

Belt booster, a new unit in materials handling equipment, is described as Light Medium Duty Stationary Belt Booster. Is said to feature the angular hump and a snub with rollers that are independently adjustable both vertically and horizontally, and to make training of the belt easy. Redesigned Medium Duty "Pakaged" Power Unit containing its own take-up is adaptable to drive at either end or at any point along the incline, depending upon installation, manufacturer states. For details and prices write to Island Equipment Corp., 27-01 Bridge Plaza North, Long Island City, N. Y.

Electron Multiplier Photometer

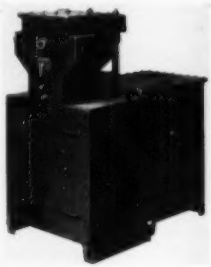
The Electron Multiplier Photometer is designed for general purpose measurement of very low light intensities. Photomultiplier tubes affording high sensitivities are used as detectors, thus obviate the need for additional ampli-



fiers. Photometer is comprised of detector, power supply and controls, and galvanometers, an arrangement which is said to make it convenient for direct use or for attachment to various instruments. Announced features are: selective wide range of sensitivity; linear response; measurements in ultraviolet and visible region; dark current balance control; constant voltage; stable battery power supply; interchangeable photomultiplier tubes; flexible utility; compactness; simple operation. For details and prices write to Farrand Optical Co., Inc., 4401 Bronx blvd., New York 66, N. Y.

Valimotor Starter

Valimotor (volt-ampere-limitor) Starter, also known as Type VIII Enclosed, is described as a combination starter with self-contained disconnect switch for squirrel-cage, synchronous and wound-rotor motors for 2300-4600 volt service. It is designed to provide unlimited short circuit protection in Class I, Group D hazardous locations. Equipped with Type ZHS magnetic contactor of 50,000 KVS interrupting capacity, more than ample to clear a fault current in motor circuit. As illustrated, ZHS is mounted in rear oil tank. Oil disconnect switch permits isolation of starter from power lines. Overload Relay Panel, mounted in front compartment, is designed to give



inverse time element protection for prolonged overloads, and to trip instantly on short circuits. After a short circuit occurs, the *start* button needs only to be pressed to re-start motor. Built for motors to 600 h.p. at 2300 v. and 4600 v. 60-cycle service. For 25-cycle power circuits, max. rating is given as 300 h.p. at 2300 v. and 250 h.p. at 4600 v. For details and prices write to Electric Controller & Mfg. Co., 2700 East 79th street, Cleveland 4, Ohio.

Pull-Out Pumps

Pull-Out models in axial and mixed flow type pumps are so constructed that all working parts are removable without breaking discharge connections. Suction bell, impeller, impeller housing, shaft, motor base and motor can be removed without disturbing column and discharge elbow, it is stated. Designed particularly for power plant condenser circulation and for other continuous operations where it is desirable to disengage all working parts for periodic inspection without breaking pipe or mounting connections. Said to be particularly advantageous when discharge elbow is below floor level or when pit in which pump is installed is not easily

drained. Supplied in either cast or welded construction and of alloy materials, if specified. Pump sizes to 100,000 g.p.m. For details and prices write to Economy Pumps, Inc., Div. of Hamilton-Thomas Corp., Hamilton, Ohio.

Holding steady....

The Bettmann Archive

It wasn't always easy to hold steady in the early days of photography—
or in the pioneering of any new industry.

Niagara Alkali Company, a pioneer in the field of electro-chemistry in America has always held steady in the development of high-quality products. And, through the years, Niagara has always kept its aims in proper focus and has always had the courage and willingness to try new methods and techniques in manufacture and servicing.

Count on Niagara for Caustic Soda, Caustic Potash, Carbonate of Potash, EBG Liquid Chlorine, Paradichlorobenzene and Niagathal (Tetrachloro Phthalic Anhydride).

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Literature

Valdura Div., American-Marietta Co., 43 East Ohio street, Chicago 11, Ill. Booklet, "Plan Before You Paint Your Plant". Purports to tell an impressive story of how selected colors increase production by improving visibility, how color saves thousands of dollars by reducing accident hazards, and how it decreases work fatigue and absenteeism. Features a Dial-A-Tone color selector, an ingenious device designed to make color selection as easy as dialing a telephone, and permits preview of recommended color combinations—one for ceiling, one for wall, one for dado. Also available is Valdura Painting Guide with recommendations as to preparation, primers, etc., for industrial applications.

Bristol Co., Waterbury 91, Conn. Catalog, "Buyers' Guide, No. P1238." Contains detailed information on thermocouples, protection tubes and other pyrometer accessories. Technical section, described as "Users' Manual", includes engineering handbook data on such subjects as factors affecting thermocouple life, corrosion and poisoning, thermocouple reproducibility, thermocouple insulation. Illustrates typical applications. Tables of calibration data for commonly-used base metal and rare metal thermocouples included.

British-Continental Trade Press Ltd., 225 West 34th street, New York 1, N.Y. Book, "Waste Trades Manual and Directory", price $5.00. Said to be the only directory and year-book of the world's waste material trade and reclamation industry. Sponsored by the British Waste Trade Federation. Typical chapters include "Transportation and the Waste Materials Industry in the United States"; "Around the World, Survey of Waste Material Trade and Conditions in Many Countries"; Organizations and Trade Associations in Argentina, Belgium, Canada, China, Denmark, France, Germany, Great Britain, Italy, Mexico, Netherlands, South Africa, Sweden, Switzerland, United States. Provides also a World Directory to dealers in textile wastes, waste paper, scrap metals, miscellaneous waste materials, scrap rubber, machinery and accessories.

Bennett Mfg. Co., Alden, N.Y. Catalog, "Waste Receptacles". Features complete line of sizes for every purpose and new non-rusting stainless steel feet.

Barrett-Cravens Co., 4609 S. Western boulevard, Chicago 9, Ill. Bulletin, 4873, "Storage Racks". Contains full information on various types, including arc-welded construction, easily adjustable runners, and other features that are said to facilitate handling. Provides illustrations of typical installations where actual capacity of available storage space, was multiplied.

Cleveland Worm & Gear Co., 3249-59 East Eightieth street, Cleveland 4, Ohio. Bulletin, "More Horsepower Per Dollar With Speedaire". Presents case histories of typical applications of worm gear Speed Reducers with facts and figures.

Chain Belt Co., 1600 W. Bruce street, Milwaukee 4, Wis. Bulletin, "Rex Flat Spray Nozzles", No. 48-38. Illustrates nozzles in service where water or liquid chemicals are used in cleaning, cooling, washing and de-scaling operations. Provides tabular information concerning discharge in gallons per minute, dimensions, materials, sizes and prices.

Clark Equipment Co., Industrial Truck Div., Battle Creek, Mich. Bulletin, "Dynatork Drive". A sales talk for a new mechanism devised for forklift truck power transmission. Cutaway drawing and other illustrations tell how it works, describes its performance, and show its application with the Utilitruc to industrial use.

Dodge Mfg. Co., Mishawaka, Ind. Catalog page, A-441, Taper-Lock Bushing, Taper-Lock Rigid Couplings. Introduces new Rigid Coupling for rigidly connecting the ends of two shafts, replacing old type Flange Couplings in sizes to 2 15/16 ins., also takes place of Ribbed and Compression couplings. Provides specifications on shaft sizes, maximum bore, weights, dimensions and prices.

Brown-Bridge Mills, Inc., Troy, Ohio. "Gumming Chart for Printers". Designed to provide printers with complete information on nearly forty different types of surfaces and correct gummed paper for best results. Listed alphabetically, the surfaces are classified by groups, each group appearing in colored panel applying to particular gumming surface recommended. Makes the wall chart a condensed, handy reference.

Dings Magnetic Separator Co., 4740 W. McGeogh avenue, Milwaukee 14, Wis. Catalog, 301-A, "Dings Triple Pole Magnets". Illustrates the use of various types of rectangular magnets, also their advantages is strong magnetic pickup power, even flux distribution, and easy installation at any angle. Pictures use in special applications in paper making and other industries.

Exporters' Digest, 170 Broadway, New York 7, N.Y. Booklet, "Know-how". Comprises a series of export "know-how" articles of particular interest to firms starting or considering an export program. Articles cover four principal methods of conducting an export business under individual titles: Exporting Directly from the Factory, The Independent Combination Export Manager, Selling Abroad Through Export Houses, and Eight Reasons for Forming a Subsidiary Export Company. Available gratis.

Electric Controller & Mfg. Co., 2700 East 79th street, Cleveland 4, Ohio. "EC&M Accelerator, Vol. 1, No. 23. Describes Valimitor Motors starters as short circuit protection "for Today and Forever" with 2300-4600 motors on a power circuit of any capacity.

Elliott Co., Jeannette, Pa. Bulletin PB 2400-1, "Elliott Fabri-Steel Synchronous Generator". With illustrations and descriptive copy tells about construction features of newly-designed generator.

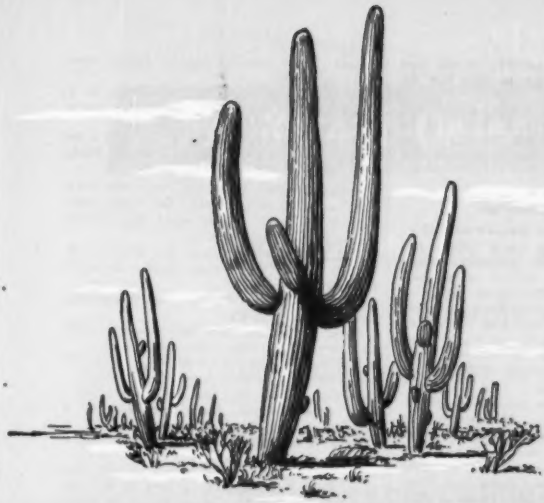
Eberbach & Son Co., Ann Arbor, Mich. "Eberbach Announcer of Scientific Equipment", 49-1-33. Discusses Barnstead Bantam Demineralizer, Pure Water by Ion Exchange, Todd Vacuum Pump, Eberbach Laboratory Shakers, Modified Solution Balance with Graduated Beam, and other apparatus.

Foster Wheeler Corp., 165 Broadway, New York 6, N.Y. Brochure, "Karbate Heat Exchangers". Applications of Karbate such as an HCl absorber, an ejector for producing a high vacuum, and a standard heat exchanger for use in pilot plants and small volume processes are shown. Physical properties, a table giving resistance to a large number of acids, salt solutions, alkalis, organic compounds, gases and mixtures also are suplied.

Forest Products Research Society, Box 2010 University Station, Madison 5, Wis. Book, Volume 2 of Proceedings. Price $8.00 to non-members. Address Charles E. Van Hagan, Secy.-Treas. Contains 45 technical papers and discussions presented at Second National Meeting of Society held in March, 1948 in Chicago. Contents include following general subjects: Improved utilization of wood and chemical conversion of wood waste; Mechanical conversion of wood waste and manufacture of fiber products; Bark removal and utilization; Coordination of research in the field of forest products; Finishes for furniture; Woodworking equipment; Dielectric heating.

Fischer & Porter Co., Hatboro, Pa. Catalog Section 61, "Rato-Chlor". Introducing Rato-Chlor as a dry-chlorine dispenser which uses no water seals, bell jars, poppets or similar devices. Complete with illustrations, installation charts, cut-away drawings, capacity charts and sales copy.

Goulds Pumps, Inc., Seneca Falls, N.Y. Bulletin 622-A-2, "Centrifugal Pumps." Announcing a new centrifugal for pumping clear liquids at low cost. Specifications, performance charts and selection table, dimension tables provided with sectional views and parts list.



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FOR PLASTICIZING AND FLAME-PROOFING PAPER

WHAT IT IS

CORPOLIN is a heavy non-volatile liquid —clear, colorless, odorless, free-flowing. Resembles glycerine in feel and appearance.

A highly concentrated solution of organic compounds in water, containing 70% solids.

NON-TOXIC; NON-FLAMMABLE; does not solidify, even in extreme cold.

WHAT IT DOES

Highly effective for softening paper. Also imparts flame-resistance, and a cloth-like feel. Replaces glycerine at less than ½ the cost.

Introduces valuable economies as a humectant. Plasticizes papers for draperies, bags, waxed and glassine containers, etc.

SHIPPED IN 600 LB. STEEL DRUMS AND 150 LB. CARBOYS

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HEYDEN CHEMICAL CORPORATION THE AKTIVIN DIVISION NEW YORK

Army-Navy

N. Y. Purch. Office

Army Invitation to Bid

QM-30-280-49-1175—covering Cushioning Material, Bags, Barrier Material and Wrapping Paper, as follows:

Item No. 1—Cushioning material, paper, waxed, shredded 100 lb. bales, plain or printed —20,000 lbs.

Item No. 2—Barrier Material, Greaseproof (non-heat sealing 24" wide)—200 rolls.

Item No. 3—Barrier Material, Greaseproof (non-heat sealing 36" wide)—900 rolls.

Item No. 4—Paper, wrapping, kraft, 60 lb. basis, 36" wide, 9" diameter—450 rolls.

Item No. 5—Bags, interior packaging, waterproof, greaseproof, heat sealable (heavy duty) —125,000 each.

Item No. 6—Cushioning material, Paper waxed, shredded, 100 lb. bales, plain or printed —20,000 lbs.

Item No. 7—Barrier Material, Greaseproof, 36" wide—3,000 rolls.

Item No. 8—Bags, interior packaging, waterproof, greaseproof, (heavy duty), size 2½" x 3"—75,000 each.

Item No. 9—Bags—same as above—size 3" x 5"—125,000 each.

Item No. 10—Bags—same as above—size 4" x 32"—15,000 each.

Bids will be opened 10 May 1949 at 3 PM (EDST) at the New York office. Delivery: bidder to state best possible delivery date. This procurement is for the U. S. Army.

QM-30-280-49-1178—Bags, Interior Packaging, Metal Foil—12,000 each. Bids will be opened 10 May 1949 at 2 PM (EDST) at the New York office. Delivery—bidder to state best delivery possible.

QM-30-280-49-1173—Liners, Shipping Container, Waterproof-Barrier—18,000 each. Bids will be opened 10 May 1949 at 1 PM (EDST) at the New York office. Delivery—bidder to state best possible date.

Army Bids Received

Ten (10) bids have been received on QM-30-280-49-1123 covering Paper, Book, Offset, sub-70, White — various sizes. Directive quantity was: 4,500 reams. Total quantity on all bids received: 45,000 reams. Price range: $6.489 to $19.80. This procurement is for the U. S. Army.

Twenty-three (23) bids have been received on QM-30-280-49-1089 covering Various Paper Items. Total quantity of bids received: 505,714; Price Range:—from: $1.59 to $34.26. This procurement is for the U. S. Army.

Nine (9) bids have been received on QM-30-280-49-1138 covering Paper, Mimeograph and Typewriter. Directive quantity: 60,000 reams (Mimeograph); 10,000 reams (Typewriter); total quantity on all bids received: 416,400 reams (Mimeograph); 39,000 reams (Typewriter). Price Range: from: $.442 to $.73575 (Mimeograph); from: $.3816 to $.5886 (Typewriter). This procurement is for the National Guard.

Four (4) bids have been received on QM-30-280-49-1141 covering Standard Newsprint. Directive quantity: 75.9 NLT; total quantity on all bids received: 303.6 NLT. Bidders, quantities, and prices are as follows:

Great Northern Paper Co., New York City 17—85 short tons @ $97.976 each.

Bermingham & Prosser Co., New York City 16—75.9 NLT @ $132.67 per NLT.

Coy, Hunt & Co., New York City 16—75.9 NLT @ $112.00 per NLT.

Boston Paper Board Co., Boston, Mass.—75.9 NLT @ $.0695 lb. (½ of 1% 20 days) FAS Boston; $.0745 lb. FAS New York. This procurement is for Government and Relief for Occupied Areas (Ryukyus).

Army Awards Made

QM-30-280-49-1049 covering Paper and Wadding, as follows:

Paper Div., Leeds Sales Co., Inc., New York 1, N. Y.—2,580 rolls (Corrugated Paper) from: $5.83 to $7.90 roll.

Shredded Paper Products Co., Baltimore, Md. —17,000 lbs. (Paper, waxed, shredded) @ $.02 per lb.

Specialty Shredding Co., Royersford, Pa.—37,000 lbs. (Same as above) from: $50.20 to $96.10 Ton.

Barnett Paper Shredding Co., Columbus, Ohio —14,000 lbs. (Same as above) @ $1.70 per cwt.

Pioneer Paper Stock Co., Chicago 10, Ill.—32,000 lbs. (Same as above) @ $92.04 per Ton.

Atlanta Paper Co., Atlanta, Ga.—420 rolls (Paper, corrugated) @ $5.35 per roll. 2,100 rolls (30") (Paper, wrapping, Kraft) @ $6.52 Cwt. 330 rolls (36") (same as above) @ $6.52 Cwt. 330 rolls (48") (same as above) @ $6.52 Cwt.

Crown Willamette Paper Co., Crown Zellerbach Corp., San Francisco, Cal.—6,340 rolls (Paper, Wrapping Kraft—various sizes and weights) from: $6.86 to $7.35 Cwt.

National Container Corp. of Wisconsin, Tomahawk, Wisc.—7,940 rolls (Paper, Wrapping, Kraft #2 rolls—various sizes) @ $.06½.

Trinity Bag & Paper Co., Inc., New York 18, N. Y.—2,790 rolls (Paper, same as above) @ $6.83 Cwt.

Kimberly-Clark Corp., Neenah, Wisc.—4,900 rolls (Wadding, non-absorbent and absorbent—various size rolls) from: $7.26 to $12.10 roll.

This procurement is for the U. S. Army.

Five (5) awards have been made on QM-30-280-49-1020 covering Paper, Map, Index and Cover—various sizes and colors, to:

Eastern Corp., Bangor, Maine—2,250 reams (Paper, Cover Sstock, Antique finish) from: $7.15 to $14.30.

Bermingham & Prosser Co., New York, N. Y. —100 reams (Paper, Map, Hi-Wet Strength) from: $4.25 to $7.25.

Herman Grover, New York 7, N. Y.—200 reams (Paper, Cover Stock, Antique finish) from: $13.71 to $14.11.

Walker, Goulard Plehn Co., Inc., New York, N. Y.—690,000 reams (Wood-Fiber Paper) from: $.02519 to $.03335. 750,000 reams (Paper, Cover Stock) from: $8.02 to $16.74.

Barton, Duer & Koch Paper Co., Wash., D. C. —6,900 reams (Paper, Map, Hi-Wet Strength) from: $3.44 to $21.84.

Directive quantity: 710,200. This procurement is for the U. S. Army.

Three (3) awards have been made on QM-30-280-49-1090 covering Paper—various, to:

The Mudge Paper Co., Baltimore 2, Md.—200 reams (Paper, gummed) from: $5.42 to $6.05.

Bulkley Dunton Co., Inc., New York City—1,360 reams (Paper, Map, Sulphite) (17 x 22—500, white 36 x 48") from: $12.00 to $12.376. 1,360 reams (Same as above — 38 x 50") from: $13.17 to $13.58.

Marquette Paper Corp., Chicago 6, Ill.—600 reams (Same as above—36 x 48") @ $13.755. 600 reams (Same as above—38 x 50") @ $15.167.

This procurement is for the U. S. Army.

One (1) award has been made on QM-30-280-49-1123 covering Paper, Book, Offset, White, various sizes, to:

Walker-Goulard-Plehn Co., Inc., 450 Pearl St., New York City—4,500 reams from: $7.416 to $16.639.

This procurement is for the U. S. Army.

Two (2) awards have been made on QM-30-280-49-1093 covering Paper, Duplicator, to:

Walker-Goulard-Plehn Co., Inc., New York City—20,000 reams from: $.9221 to $1.1312.

Marquette Paper Corp., Chicago, Ill.—35,000 reams (Canary color) from: $.7283 to $.7873. 5,000 reams (Pink) from: $.7282 to $.7873. 20,000 reams (White) from: $.6849 to $.744.

This procurement is for the U. S. Army.

Five (5) awards have been made on QM-30-280-49-1091 covering Paper, Mimeograph and Typewriter, to:

Bulkley Dunton & Co., Inc., New York City —6,000 reams (Mimeograph Paper) @ $.498.

Frank Parsons Paper Co., Inc., Washington, D. C.—13,500 reams (Mimeograph Paper) from: $.4821 to $.525.

Bermingham & Prosser Co., New York City —23,500 reams (Mimeograph Paper) from: $.533 to $.445.

Champion Paper & Fibre Co., Hamilton, Ohio —7,000 reams (Mimeograph Paper) @ $.4647.

Garrett Buchanan Co., Phila., Pa.—5,000 reams (Typewriter) from: $.2998 to $.3942. 5,000 reams (Typewriter) from: $.3642 to $.481.

This procurement is for the Officer's Reserve Corps.

Awards have been made on QM-30-280-49-1051 covering Guide and Index Cards—various sizes, to:

Guide System & Supply Co., Inc., New York City 13—17,750 each (guide cards) from: $.019542 to $.020392. 58,000 each (guide cards) from: $.024132 to $.027447.

Oxford Filing Supply Co., Garden City, L. I. —49,250 each (guide cards) from: $.0187 to $.0254.

Warshaw Mfg. Co., Bklyn., N. Y.—50,000 each (index cards) @ $.0009. 1,000,000 each (index cards) @ $.00075. 1,000,000 each (index cards) @ $.00215. 580,000 each (index cards) @ $.0051 to $.0054. 1,000,000 each (index cards) @ $.0022. 6,100,000 each (index cards) @ $.0007.

Oxford Filing Supply Co., Inc., Garden City, L. I.—280,000 each (guide cards) from: $.0048 to $.0055. 630,750 each (guide cards, pressboard) from: $.0240 to $.0292.

(Continued on page 44)

Building

- **FOR THE PAPER INDUSTRY**
- We design, build, and equip paper and pulp mills . . . steam generating plants . . . and facilities for eliminating stream pollution.
- Under one contract and one responsibility, we deliver jobs complete, ready for operation.
- We also furnish engineering reports and surveys. Current cost data available at all offices.

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OFFICES IN NEW YORK, HOUSTON, CHICAGO, CINCINNATI AND LOS ANGELES

. . . A Record Order for "Ringvalves"!

There's something distinctly different about the Oliver Ringvalve Filter and, for most chemical pulp washing or deckering jobs, something distinctly superior. A close study of its design and of its operating principle discloses the features which enable it to produce better results as a washer or decker:

FILTERS

With this order for 16 Oliver Ringvalve Filters, the number of Ringvalves on order or in service now totals several score. And the number of repeat orders, too, is steadily mounting. Both rising sales curves attest the popularity of this distinctly different and distinctly superior washer and decker.

- high hydraulic capacity
- operable with dilute stock, thus promoting more uniform and better sheet formation
- minimum resistance to flow—no internal piping
- capable of handling sustained peak loads
- multi-stage washing plus re-washing on fewer units using counter-current washing
- single or two-stage washing on one unit
- operable by barometric leg
- clearance between drum and vat prevents stock accumulation
- external adjustment of ringvalve

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Factories: Oakland, Calif. • Hazleton, Pa. • Orillia, Canada • Melbourne, Australia

Army-Navy

N. Y. Purch. Office

(Continued from page 40)

Guide System & Supply Co., Inc., New York City—140,000 each (guide cards) from: $.019542 to $.023027. 449,250 each (guide cards, pressboard) from: $.019542 to $.027447. 250,000 each (cards, Index, Filing) from: $.0021 to $.0026.

Ennis Tag & Salesbook Co., Ennis, Texas—3,900,000 each from: $.00066 to $.00069.

This procurement is for the U. S. Army.

Navy Invitations To Bid

Inv. No. 4559—Sealing Tape, paper—23,000 rolls. Bide will be opened 11 May 1949 at the New York office. Delivery: during June to various destinations.

Inv. No. 4532—Tape, adhesive—10,800 rolls. Bids will be opened 10 May 1949 at the New York office. Delivery: during June to various destinations.

Inv. No. 4588—Tape, masking—12,750 rolls. Bids will be opened 4 May 1949 at the New York office. Delivery: during June and August to various destinations.

Inv. No. 4533—Tags, shipping—3,960,000. Bids will be opened 11 May 1949 at the New York office. Delivery: June to various destinations.

Inv. No. 4714—Boxes, pads and liners, fibreboard for packing vacuum packed coffee—25,000 sets. Bids will be opened 3 May 1949 at the New York office. Delivery: during June to Naval Clothing Depot, Bklyn., N. Y.

Inv. No. 4601—Paper, Index, chemical wood, paper, various types, 9,800 sheets Paper, various types—3,700 reams. Bids will be opened 13 May 1949 at the New York office. Delivery: during June to various destinations.

Inv. No. 4745—Paper, various—26,300 sheets (1200 reams) Part #3 Bids will be opened 24 May 1949 at the New York office. Delivery: June 1949 to various destinations.

Inv. No. 4751—Paper, teletype—7,000 pg. Bids will be opened 26 May 1949 at the New York office. Delivery: June and July 1949 to various destinations.

Inv. No. 4746—Boxes, fiberboard, shipping—165,000 each, approx. Bids will be opened 25 May 1949 at the New York office. Delivery: July 1949 to various destinations.

Inv. No. 4720—Barrier Material, approx. 740 rolls. Bids will be opened 26 May 1949. Delivery: June and September 1949 to various destinations.

Inv. No. 4738—Cellulose, 100% cotton linters, Gr. 611—1,200,000 lbs. Bids will be opened 26 May 1949 at the New York office. Delivery: period beginning date of contract to 30 June 1950, to Supply Officer, Naval Powder Factory, Indian Head, Md.

Inv. No. 4517—Paper, waxed, wet process, 24" wide, 1500 yards per roll—approx. 118 lbs. per roll—4420 rolls. Bide will be opened 9 May 1949 at the New York office. Delivery: June 1949 to various destinations.

Inv. No. 4725—Paper, blueprint, unsensitized, 100% rag, roll diameter not over 21". Substance 48 M (17 x 22) 30" wide, 1500 yards per roll; 210 lbs. approx. weight per roll—200 rolls. Bide will be opened at the New York office. Delivery: 30 days to SO, Puget Sound, Naval Shipyard, Bremerton, Wash.

Inv. No. 4725—Paper, blueprint, unsensitized—100% rag—(210 lbs. approx. weight per roll)—42,000 lbs. (200 rolls). Bids will be opened 2 May 1949 at the New York office. Delivery: to Supply Officer, PSNS Bremerton, Washington, within 30 days.

Inv. No. 4517—Paper, waxed, wet process,—521,560 lbs. (approximately). Bids will be opened 9 May 1949 at the New York office. Delivery: June 1949 to various destinations.

Inv. No. 4560—Paper, teletype, perforator—various, 403,500 rolls. Bids will be opened 6 May 1949 at the New York office. Delivery: May to August 1949 to various destinations.

Inv. No. 4715—Paper, white index, 34" x 44"—100,000 sheets. Bids will be opened 23 May 1949 at the New York office. Delivery:—30 days to the Officer In Charge, Naval Recruiting Bur., Long Island, New York.

Inv. No. 4721—Paper, corrugated, single-face—330 rolls. Bids will be opened 23 May 1949 at the New York office. Delivery: June 1949 to Supply Officer, Naval Air Station, San Diego.

Inv. No. 4705 Pt. 2—Paper, cross-section, Pads—1500 each. Bids will be opened 24 May 1949 at the New York office. Delivery: June 1949 to Supply Officer In Charge, Naval Supply Depot, San Pedro, Cal.

Inv. No. 4705 Pt. 1—File Folders—wallet type—35,000 each. Bids will be opened 24 May 1949 at the New York office. Delivery: June 1949 to various destinations.

Inv. No. 4705 Pt. 3—Paper, duplicator, white—14,000 reams. Bids will be opened 24 May 1949 at the New York office. Delivery: June 1949 to Supply Officer In Charge, Philadelphia Navy Yard, Phila., Pa.

Inv. No. 4705 Pt. 4—Pencils, mark sensing—21,600 each. Bids will be opened 24 May 1949 at the New York office. Delivery: June 1949 to Supply Officer, Long Beach Navy Yard, Long Beach, Cal.

Inv. No. 4631—Fiberboard Boxes, shipping, regular slotted—various—111,000 each. Bids will be opened 23 May 1949 at the New York office. Delivery: June 1949 to various destinations.

Inv. No. 4712—Fiberboard Boxes, shipping—various—96,200 each. Bids will be opened 6 May 1949 at the New York office. Delivery: May 1949 to Supply Officer In Charge, GSD, Navy Supply Center, Norfolk, Va.

Inv. No. 4589—Bags, Grocers, various—approximately 1,402,000 each. Bids will be opened 6 May 1949 at the New York office. Delivery: June 1949 to various destinations.

Inv. No. 4706—Fiberboard Boxes, shipping, regular slotted—84,000 each. Bids will be opened 10 May 1949 at the New York office. Delivery: June 1949 to various destinations.

Inv. No. 4591—Barrier Material—various—3,800 rolls. Bids will be opened 10 May 1949 at the New York office. Delivery: June 1949 to various destinations.

Inv. No. 4625 Pt. 1—Paper, index, chemical wood, various—76,300 sheets. Bids will be opened 19 May 1949 at the New York office. Delivery: June 1949 to various destinations.

Inv. No. 4625 Pt. 2—Paper, white, various—3,000 reams. Bids will be opened 19 May 1949 at the New York office. Delivery: June 1949 to various destinations.

Inv. No. 4755—Offset Paper, (Multilith)—3,000 reams. Bids will be opened 20 May 1949 at the New York office. Delivery: 30 days to Navy Purchasing Office, New York City.

Navy Awards Made

Inv. No. 4196—Paper, corrugated, single face, 2125 rolls—balance—75 cancelled. To: National Container Corp., Long Island City, New York—from: $5.00 to $5.75 per roll.

Inv. No. 4264—Paper, offset, Mutlilith process—6,825 reams, to:

Walker Goulard Plehn Co., New York City—5,325 reams @ $2.005 to $2.88 per ream (1%—10 days).

Frank Parsons Paper Co., Inc., Wash., D. C.—1,500 reams @ $2.63 per ream (1%—20 days).

Inv. No. 4265—Paper, recorder tape and teletype—56,300 rolls, to:

Link Paper Co., New York City—46,800 rolls—from: $.116 to $1.45 per roll.

NOTE: (9,500 rolls have been readvertised.)

Inv. No. 4348—Tape, adhesive, 1" wide—2,000 rolls, to:

Bauer & Black Div. of the Kendall Co., Chicago, Illinois—@ $.95 per roll.

Inv. No. 4405—Tape, mending, cellulose sheeting—691,930 rolls, to:

Minnesota Mining & Mfg. Co., St. Paul, Minn.—474,030 rolls @ $.10 to $2.59.

Industrial Tape Corp., New Brunswick, N. J.—217,900 rolls @ 10c to $.86.

Senate Bill 1631

WASHINGTON—Senate Bill 1631, introduced by Sen. Harry Pulliam Cain (R-Wash.) April 18, calls for the establishment of the Columbia Valley Administration. Development of the Pacific Northwest would affect the pulp and paper industry immeasurably. The development of the more than 30 million kilowatts of electric power, of which only a little more than three million is now installed, would bring profound changes, it is asserted.

MEISEL MACHINERY IS HELPING IN ALL FIELDS

Cigarette	**Wax**	**Photographic**	**Jet Propulsion**
Condenser	**Grease Proof**	**Snap-out Forms**	**Aero-engine Parts**

MEISEL PRESS MFG. CO. **950 Dorchester Ave., Boston**

MIDVALE WATER BOX ROLLS LAST LONGER

Many paper mill men have dreamed of a roll in the wet position of the mill calender that would not pit or corrode . . . and that would not need grinding at frequent intervals. For these men, Midvale offers an authentic case history of two Midvale stainless steel rolls which demonstrates how their own roll troubles can be cured.

A paper mill in Michigan installed two of our forged, hardened and ground stainless steel calender rolls in October, 1947. *For more than eight months,* these rolls worked without the need for grinding and still showed no evidence of pitting or corrosion. This customer decided to equip all his mills with Midvale stainless steel rolls in the wet position. The fact that he saved nearly $15,000 in grinding costs alone on the original two rolls convinced him. Be convinced, yourself. Send for your copy of MIDVALE FORGED, HARDENED AND GROUND ROLLS FOR PAPER MILLS.

THE MIDVALE COMPANY • NICETOWN • PHILADELPHIA

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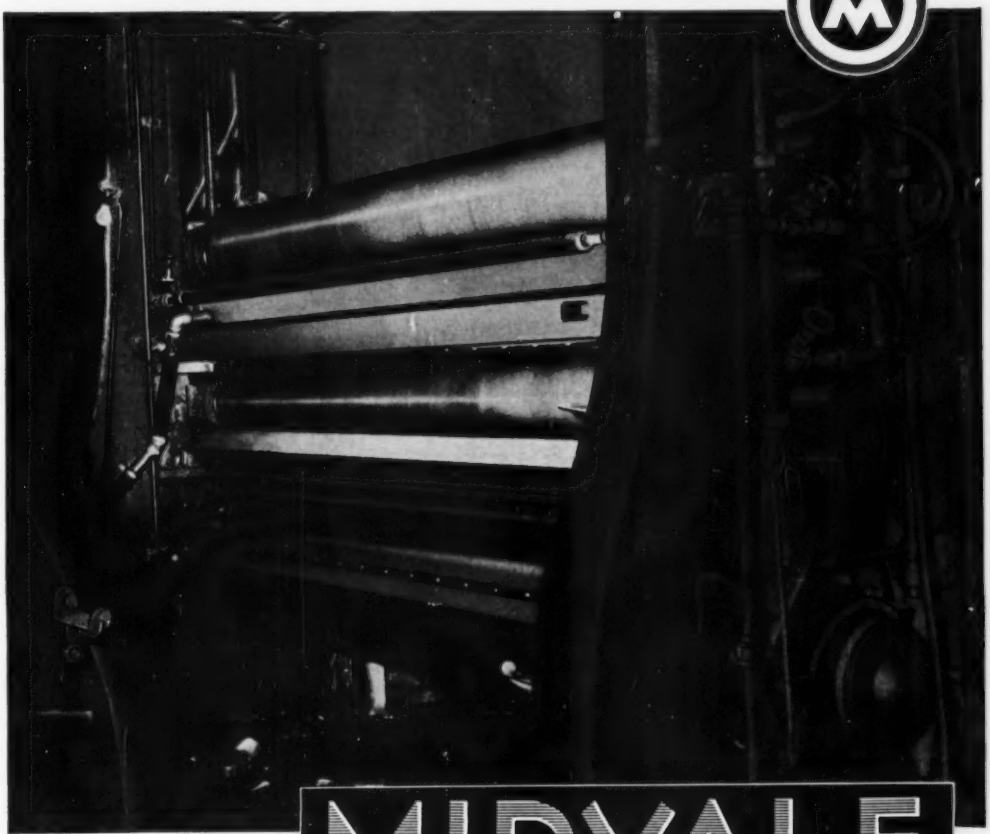


CORROSION AND HEAT RESISTING CASTINGS

FORGINGS AND RINGS

MIDVALE

Custom Steel Makers to Industry

Meetings

ASSOCIATION EXECUTIVES: Please send us your meeting dates and locations for this column as far in advance as possible. No charge for publication.

MAY 6: American Ass'n. of Textile Chemists and Colorists, New York Section, 8:00 p.m., Kohler's Swiss Chalet, Rochelle Park, N. J.

MAY 8-11: American Institute of Chemical Engineers, Tulsa Regional Meeting, Mayo Hotel, Tulsa, Oklahoma.

MAY 10-12: Packaging Conference, American Management Ass'n., Auditorium, Atlantic City, N. J.

MAY 10-13: Eighteenth National Packaging Exposition, Public Auditorium, Atlantic City, N. J. For details, wrtie to Mr. James O. Rice, Sec., 330 West 42nd St., New York, N. Y.

MAY 13-14: American Pulp & Paper Mill Superintendents Ass'n., Inc., Northwestern Divn. Hotel Conway, Appleton, Wis. For further details, write to Mr. F. X. Kreiling, Chairman, Thilmany Pulp & Paper Co., Kaukauna, Wis.

MAY 15-20: Third Annual New York Stationery Show, New Yorker Hotel, N. Y. For further details, write to George F. Little, Management, 220 Fifth Ave., N. Y.

MAY 19-20: Institute of Paper Chemistry, Thirteenth Annual Executives Conference, Appleton, Wis. For details, write to John G. Strange, secretary.

MAY 26: Technical Ass'n. of the Pulp & Paper Industry, Delaware Valley Section, Engineer's Club, 1317 Spruce Street, Philadelphia, Pa. For details, write to Miss L. V. Hans, secretary-treasurer, 1010 Delaware Avenue, Wilmington, Del.

MAY 26-27: Insurance Conference, American Management Ass'n., Hotel New Yorker, New York.

MAY 30-JUNE 2: Annual Convention, Chemical Institute of Canada, Halifax, N. S.

JUNE 1-3: Canadian Pulp & Paper Ass'n., 1949 Technical Section Summer Meeting, General Brock Hotel, Niagara Falls, Ont., Canada. For further details, write to Douglas Jones, Sec.-Engnr., Technical Section, Canadian Pulp & Paper Ass'n., 3420 University St., Montreal 2, P. Q.

JUNE 8-9: General Management Conference, American Management Ass'n., New York.

JUNE 15-17: American Pulp & Paper Mill Superintendents Ass'n., Inc., 1949 Convention, Chalfonte Haddon Hall, Atlantic City, N. J. For details, write to George W. Craigie, secretary-treasurer, 220 East Forty-second Street, New York City 17.

JUNE 17-18: Paper and Twine Ass'n., French Lick Springs, Indiana. For details, write to Mr. John L. Richey, Sec.-Treas., Suite 651-653, Hotel Sinton, Cincinnati 2, Ohio.

JUNE 20-22: National Ass'n. of Purchasing Agents, 34th Annual International Convention & Inform-A-Show, Chicago, Ill.

JUNE 27-JULY 1: Annual Meeting, American Society for Testing Materials, Chalfonte-Haddon Hotel, Atlantic City, N. J.

SEPTEMBER 8-10: American Pulp & Paper Mill Superintendents Ass'n., Inc., New York-Canadian Division, Champlain Hotel, Bluff Point, Plattsburgh, N. Y.

SEPTEMBER 12-15: West Coast TAPPI Meeting, Multnomah Hotel, Portland, Oregon. For further details, write to V. A. Wise, Griffith Rubber Mills, 2439 N.W., 22nd Ave., Portland, Ore.

SEPTEMBER 21-23: Direct Mail Advertising Association, Inc., Annual Conference, Congress Hotel, Chicago. For details, write to Frank Frazier, Direct Mail Advertising Ass'n., Inc., 17 East 42nd Street, New York 17.

SEPTEMBER 26-29: National Paper Trade Ass'n., Fall Meeting, Stevens Hotel, Chicago, Ill. For further details, write to A. W. Chamberlain, Exec-Secy., National Paper Trade Ass'n., 220 East 42nd St., New York, N. Y.

OCTOBER 4-7: Fourth Annual Industrial Packaging & Materials Handling Exposition, Convention Hall, Detroit, Michigan. For further details, write to C. J. Carney, Jr., Managing Director, Soc. of Industrial Packaging & Materials Handling Engnrs., 20 W. Jackson Blvd., Chicago 4, Ill.

OCTOBER 10-14: West Coast Meeting, American Society for Testing Materials. (First national meeting of ASTM on West Coast.) Fairmont Hotel, San Francisco, California.

OCTOBER 14-15: American Pulp & Paper Mill Superintendents Ass'n., Inc., Southeastern Division, Hotel Roanoke, Roanoke, Virginia.

OCTOBER 24-28: National Safety Council, 1949 National Safety Congress, Chicago. For details, write to Harley B. Goodrich, National Safety Council, 20 North Wacker Drive, Chicago 6, Ill.

NOVEMBER 1-5: Pacific Chemical Exposition, California Section, American Chemical Society, San Francisco Civic Auditorium, San Francisco, Calif. For details, write to Marcus W. Hinson, exposition manager.

June 8, Election Date

ADAMS, Mass.—With local 12,796, United Mine Workers of America, present official bargaining agency, consenting, June 8 was set as the date for an election to determine the official bargaining agent for employes of the Brightwater Paper Co., it was reported on April 23. The action was taken during a hearing recently held before Robert E. Green of Boston as trial examiner for the National Labor Relations Board. The hearing, held in the Adams District Court, was on petition of the International Brotherhood of Paper Makers, AFL.

Slutz to Standards Bureau

WASHINGTON — Dr. Ralph J. Slutz, formerly with the Institute for Advanced Study, has joined the Electronics Division of the National Bureau of Standards, where he will be concerned with basic research, design, and development of electronic computers.

AMERICAN PAPER AND PULP ASSOCIATION'S PRODUCTION RATIO REPORT*

(Production as per cent of six-day capacity)

COMPARATIVE WEEKLY SUMMARIES

Current Weeks—1949		Corresponding Weeks—1948	
March 19	89.7	March 20	101.2
March 26	87.5	March 27	98.2
April 2	87.0	April 3	100.0
April 9	87.4	April 10	102.4
April 16 (Revised)	88.3	April 17	100.4
April 23	*82.3	April 24	*102.5

* Capacity in Tons—180,061. * Capacity in Tons—176,055.

COMPARATIVE MONTHLY SUMMARIES

1948						1949	
Jan.	100.1	May	100.5	Oct.	99.1	Jan.	94.6
Feb.	99.8	June	95.7	Nov.	97.1	Feb.	92.8
Mar.	100.8	July	85.3	Dec.	87.1	Mar.	‡89.3
Apr.	100.8	Aug.	96.8				
		Sept.	91.8	Year Avg.	96.2		

‡ Preliminary Ratios.

PAPERBOARD OPERATING RATIOS†

Current Weeks—1949		Corresponding Weeks—1948	
March 19	81	March 20	104
March 26	80	March 27	104
April 2	75	April 3	98
April 9	77	April 10	103
April 16	80	April 17	100
April 23	77	April 24	102

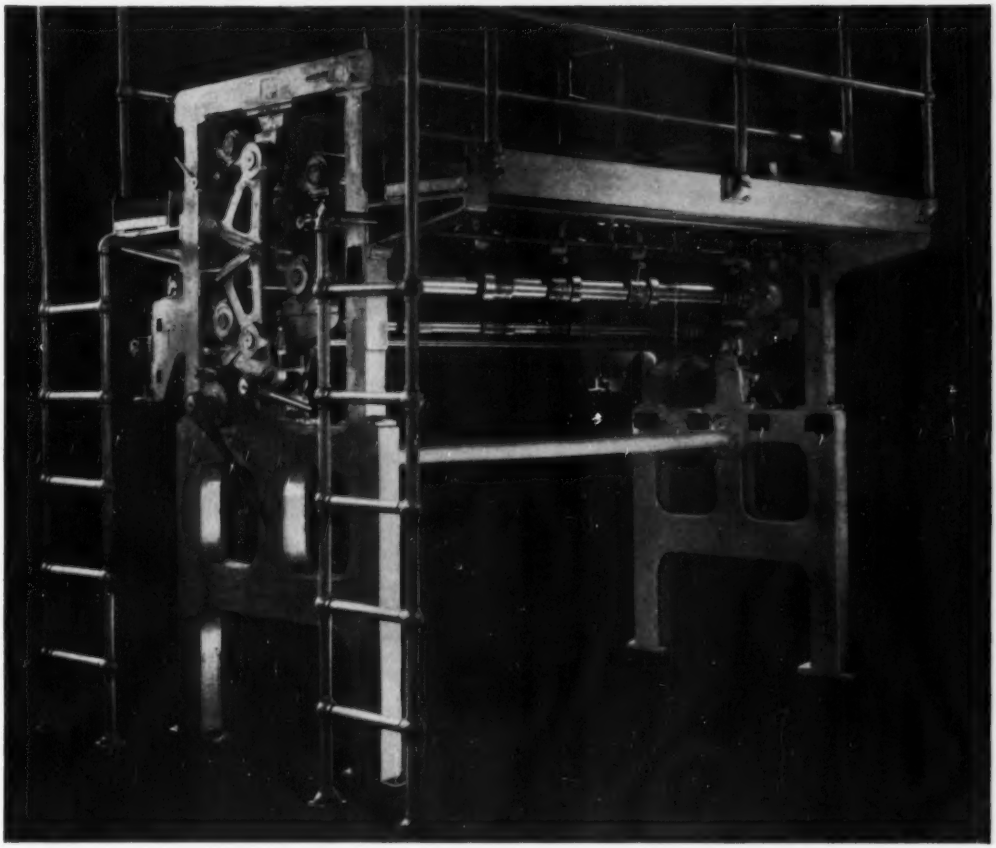
Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Year Avg.
1948	99	100	102	102	100	94	81	92	91	96	94	84	95
1949	88	85	79										

* All of the above data is based on tonnage reported to American Paper and Pulp Association. Does not include mills reporting to National Paperboard Association, except in isolated cases where both paper and paperboard are produced and separate tonnage figures are not readily available. Does not include mills producing newsprint exclusively.

† Per cents of operation based on "Inch-Hours" reported to the National Paperboard Association.

it's new–it's versatile–it's more efficient

Moore & White DUPLEX SLITTER



This slitter is built of box section frames, for hard continuous operation, and will efficiently handle 95 percent of the grades of paper and paperboard manufactured today. The unit can be operated with practically any type of sheeting equipment where fast change-over from one sheet-width to another is required. It eliminates shutdown time when changing sheet-width and also reduces waste due to resetting of slitters.

This unit, when combined with our new rotary sheet-cutters, permits continuous sheet operation. Changes of width and length of sizes are made without shutting down the combined units. The change-over from one slitter section to the other is fast, simple, and accurate.

Positive throwout of top slitter blades is accomplished through the use of a handle on each slitter section. One quarter-turn of the handle moves all blades in the section either in or out of normal operating position.

The slitter may be driven separately, from the sheet cutter, or direct from the paper machine line shaft. Each section is driven as a separate unit, complete with clutch to eliminate shock loads when change-over is made. All moving parts are encased in antifriction bearings.

The speed range of the new Moore & White Duplex Slitter will meet the needs of any sheeting equipment now in operation. It is built to standard widths of 50, 62, 72, 84, 110, and 124 inches. Additional widths are available in sizes to suit your requirements. Write today for complete information.

CUSTOM-BUILT MACHINES FOR MAKERS OF PAPER AND PAPERBOARD

The MOORE & WHITE Company

15TH STREET AND LEHIGH AVENUE • PHILADELPHIA 32, PA.

The Traffic Angle

By EDWIN CHESTER HASTINGS
Edwin Chester Hastings Traffic Service, Pittsburgh, Pa.

Paper and the ingredients required for its manufacture are important transportation items. The products needed to make paper come from widely scattered fields. The finished commodity processed for specific and general purposes moves to the world markets. From sources of raw materials supply to mill and then to the user is in itself a major transportation project. This however isn't the end, for paper can be classed as an outstanding basic material possessing several lives.

After the commodity has apparently served its normal purpose and then is discarded as waste, it moves again into a new life, returning to a mill as a major ingredient for new paper or paperboard. Thus the life of paper stock is continuous, traveling in an interesting cycle, serving many purposes without an apparent end.

Transportation plays a vital role throughout the endless journey. The many movements involve tonnage. In transportation, a ton of pulp through its life may be multiplied many times on the carriers' records. Each movement requires the service of some transportation company.

Tonnage to a common carrier means revenue. The carrier receives both tonnage and revenue from the shipper. Tonnage and revenue are closely related; one is dependent upon the other. The weight of the lading must be known in order to have something concrete upon which to assess freight charges. *For this reason an accurate statement of weight is essential.* The significance of having the true weight is as important as the correct rate because the weight is the basis used in computing freight charges.

Rates on paper assessed by the carrier should be done under a proper system rather than by the unfair method now used. Most of the rates are a price applied to each hundred pounds of lading. This method for less-carload and less-truckload shipments is proper. But for carloads or truckloads where tonnage is involved the rate should be per ton.

Other commodities have this arrangement and paper should not be isolated with those items on which hundred pounds rates are the only ones to apply. Paper is a heavy item due to its density and compactness. This involves tonnage, the chief point of interest to the carrier. Paper is however subject to damage and requires care in transit. Shipments that require covered cars do not mean the carrier should have the right to assess higher rates. The roof of a box car is intended merely to protect the lading from the weather.

The type of equipment used by the shipper and the nature of the lading aren't the prime concern for the carrier. The traffic they seek from the shipper is tonnage in volume. When a crew is sent to pick up a carload, the carrier's main interest is weight and length of haul. The carrier's only interest in the commodity itself is if the rate and weight on the item makes the revenue higher than the average. Paper and its by-products are items that furnish the carriers higher revenue due to the commodities being of values many times far above those of low grade.

Sometimes carloads are given to the carrier without being weighed. If this practice can be avoided it is best to do so for the reason many disputes arise over a difference in the correct weight. The carriers do not have an iron-clad rule that cars must be weighed before acceptance. The lading can be weighed at the origin and destination points or while in transit. There are mills located in areas and isolated sections where the installation of scales and experienced help may prove too costly. In cases of this kind it is less expensive to have the lading weighed by the carrier. For this service some carriers assess rates for switching to scales and weighing. The charges are not uniform, rates are applied to CWT, to per ton, and also a flat charge per car.

In the matter of weight, there are standard rules adhered to by all rail carriers. These rules also cover the scales of the shipper when used to weigh lading for the assessment of freight charges for the carrier. The shipper's scales are required to be maintained, tested and operated in accordance with the track scale specifications and rules approved by the Ass'n., of American Railroads.

Those responsible for ascertaining the weight of the lading can only be competent persons in the employ of the shipper. They are required to have proper instruction subject to supervision of the carrier serving the plant. The person who does the weighing must be a recognized weighmaster acceptable to the carrier. His weights will not be accepted until the shipper signs with a carrier what is known as a "weight agreement".

Many times thee shipper's weight will be checked on the carrier's scales. This is done enroute or at destination for the information of the interested carriers and to test the accuracy of previous weighings. If there is a difference, an adjustment is made and the consignor is furnished the corrected figures (when requested) by notification from the carrier. Where the difference arises is in the tare weights. Sometimes the market figure on the car will be different than the weight when the car is weighed empty.

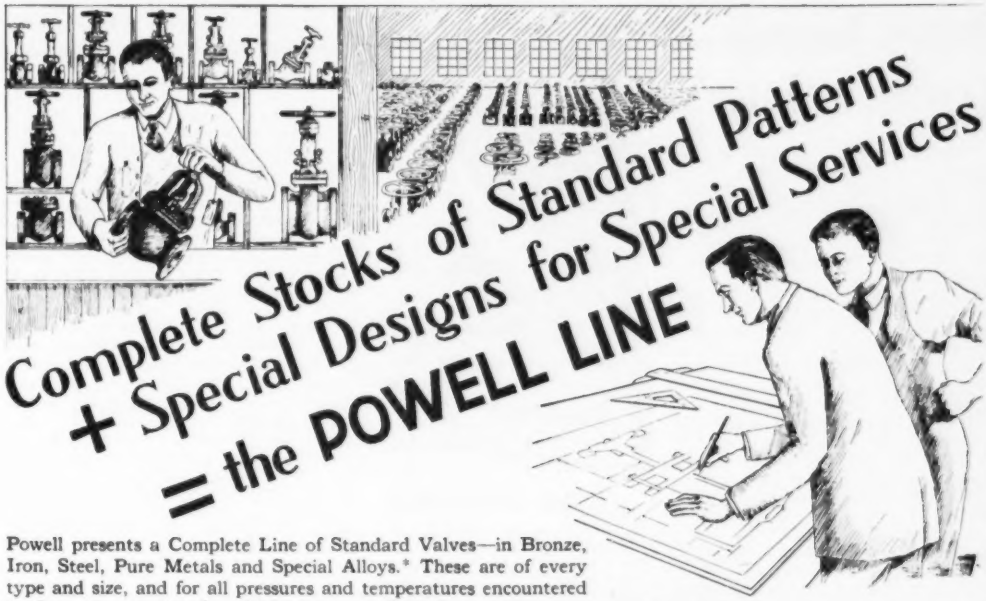
Under AAR car service rules, which all carriers are required to follow, the freight car, when built, is weighed before being placed in transportation service and the weight (generally caled tare weight) is stenciled on the sides of the car, together with the date and place where weighed. The carrier is required to reweigh each year for the first two years and once every two years thereafter.

The shipper can use the marked tare or weigh the car empty and if the weight is different, use the latter. The "marked" or "actual" information must be given to the carrier on the weight slip.

Cars are often reweighed to settle controversies between carrier and shipper over the question of correctness of weight used in computing charges on a shipment. This generally takes place just before loading or after unloading. The carrier usually applies the light weight recently ascertained to settle the dispute on correctness of scale weights. The question of correct weights can only be determined to the satisfaction of the carrier and shipper on supervised scales. The shipper's right is that excessive weights are the basis of overcharges and he can demand reweighing in order to pay no more than the legal charges. Reweighing sometimes involves extra costs for scale and switching charges.

The shipper is required to keep complete information. The carrier can demand to see this at any time. In the scale house there should be complete information, such as a record of gross, tare and net weights. A notation shall be made if actual or stenciled tare weight is used; date and time of weighing; condition of weather; car weighed at rest or in motion; coupled or uncoupled; on empty cars, the condition—if car has debris (estimated amount), or clean. The information should also be placed on the weight certificate.

Many weighmasters follow a wrong practice in that they place this information on the records with a *common lead pencil.* The method of recording is not legal for the reason that the writing can be erased and changed. The average carrier's tariff instructs to make all notations in *ink or indelible pencil.* It might be advisable for a plant to check how its scale records are noted, to save disputes and have permanent notations in line with the carrier's tariff. The use of ink rather than pencil may avoid grief.



Complete Stocks of Standard Patterns + Special Designs for Special Services = the POWELL LINE

Powell presents a Complete Line of Standard Valves—in Bronze, Iron, Steel, Pure Metals and Special Alloys.* These are of every type and size, and for all pressures and temperatures encountered in the many services for which they are adapted.

But ever-changing methods and processes continually impose new flow control conditions. For these Special Services, Powell Engineers are always ready with Special Designs.

The result is that Powell—and only Powell—makes such a complete line that today there's a Powell Valve specifically adapted to each and every flow control service known to Industry.

Write for information on applications of Powell Valves. And if you have any flow control problems, Powell Engineers will help you solve them.

Fig. 1847 — 200-pound Stainless Steel Swing Check Valve. Screwed-in cap and regrindable, renewable disc.

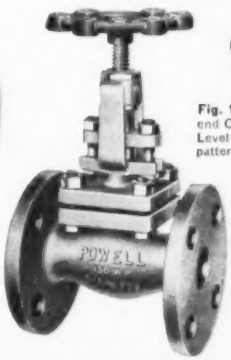


Fig. 1979 — 150-pound Stainless Steel O. S. & Y. Globe Valve with flanged ends.

Fig. 1891 — Flanged end O.S. & Y. Liquid Level Gauge. Offset pattern.

Flush Bottom Tank Valve. Available in two designs: Fig. 2309—disc rises into tank to open; **Fig. 2310**—disc lowers into body.

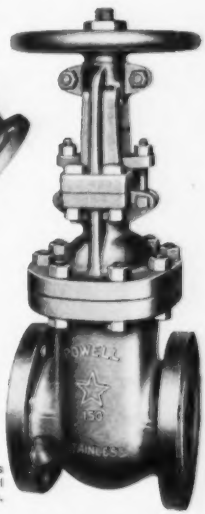


Fig. 1503 S. S. — Class 150-pound Stainless Steel O. S. & Y. Gate Valve.

Powell Valves for Corrosion Resistance are made in the widest range of metals and alloys ever used in making valves.

The Wm. Powell Company
Cincinnati 22, Ohio
DISTRIBUTORS AND STOCKS IN ALL PRINCIPAL CITIES

POWELL VALVES

Dutton Succeeds Clayson at Eaton's

PITTSFIELD, Mass.—Following the annual meeting of Eaton Paper Corp., directors on April 29, George P. Clayson, Jr., announced his withdrawal as president and the election of Harry C. Dutton of Holyoke as his successor. Mr. Clayson will remain with the corporation as vice-president, and will concentrate his efforts on the correlation of the merchandising and sales problems and ideas. Mr. Dutton, for more than ten years president of the White & Wyckoff Mfg. Co., Holyoke, also was named a director. He will assume his new duties May 16.

The other three major officers of the firm were reelected. They are: Col. William H. Eaton, chairman of the board; James Craig Smith, treasurer, and George O. Hawley, assistant treasurer.

A native of Sherman, N.Y., Mr. Dutton graduated from New York University in 1917. For many years, he held various positions in the financial and public accounting fields. He went to the White & Wyckoff Co., in 1934 as comptroller, later became assistant treasurer and a director, and on Dec. 1, 1938, was named president and general manager of the corporation.

Mr. Clayson has been president of Eaton since 1944 when he was chosen to fill the vacancy left by the death, two years earlier, of Horace W. Davis. He had served four years as vice president.

A 1930 graduate of Yale University, he was assistant manager of the New York office of the Agfa Ansco Corp., prior to coming to Eaton's as sales promotion manager in 1934. He was promoted successively to the positions of merchandise manager and sales manager.

In Holyoke, it was stated that the board of directors of White and Wyckoff will not choose a successor to Mr. Dutton "for awhile."

New Eng. Sec. TAPPI

GREENFIELD, Mass.—"Building Sales through Market Research and Quality Control" will be the theme of the Spring meeting of the New England Section of TAPPI at the Weldon hotel on May 13.

There will be a golf tourney under the direction of Clarence C. Decker at the Greenfield Country Club in the morning. At 1:30 p.m. a bridge tourney will be held under the direction of Miss Helen U. Kiely. An executive committee session is scheduled for 3:00 p.m., and at 4:00 p.m. the annual business meeting will open. Officers for the 1949-50 season will be announced. At 4:30 p.m., R. F. Hurst, assistant to the vice-president in charge of manufacturing of the Bigelow-Sanford Carpet Co., will speak on "Building a Quality Minded Organization." Dinner will be served at 7:00 p.m., after which golf prizes will be awarded and Al Bachmann, national president of TAPPI, will speak informally, following which, at 9:30 p.m., R. S. Aries of R. S. Aries & Associates will speak on "Market Research as an Aid to Sales."

ICING OUTMODED

Lake Erie pike is now available from coast to coast. . . The Summit Fish Co. of Akron, Ohio, some 30 miles from the lake, has inaugurated a long distance service, packaging the fish in one- to five-pound Goodyear Pliofilm pouches made by the Pen-Mac-Nye Co., Akron, and packed in Insulpak shipping containers which require no icing; the temperature of the fish being brought down to about 30 degrees before packing. . . Insulpak, a product of the Hinde & Dauch Paper Co., Sandusky, Ohio, permits a temperature rise of less than one-half degree per hour when the outside temperature is 70 degrees.

AMA Packaging Survey

NEW YORK—Seven major steps to lower production costs and increase sales through improved packaging, packing and shipping of both industrial and consumer products were indicated in responses to a questionnaire survey of 1,400 business companies of all sizes made public by the Packaging Division of the American Management Ass'n.

The survey was undertaken to determine topics for discussion at the annual National Packaging Exposition and Conference on Packaging, Packing and Shipping which will be attended by 15,000 suppliers and users in Atlantic City, May 10-13. It showed industry foresees greatest opportunity for advances in the following areas: (1) Development and adaptation of techniques to reduce loss through damage in shipment. (2) Greater use of the package as a stimulus to point-of-purchase sales by increased emphasis on self-selling power. (3) Design and production of packages, containers and shipping cases which will reduce handling costs by minimizing handling problems. (4) More effective use of present automatic machinery for packaging production, development of additional automatic machinery where feasible, and greater flexibility in production and processing methods and schedules. (5) Greater recognition by the shipper of the problems of handling and inter-plant shipment by the receiver. (6) Fuller utilization of advances in technical development of packaging and packing materials. (7) Closer coordination of packaging, production and sales for increased production efficiency, increased sales and more economical packaging.

Among men identified with the paper industry assisting Mr. Malcolmson in planning the conference are: Frank A. Biederman, advertising and promotion manager, creped wadding products, Kimberly-Clark Corp., Neenah, Wisc.; John Clay, sales manager, national adhesives division, National Starch Products, Inc., New York; Neil A. Fowler, director of sales and research, General Box Co., Chicago; Henry J. Howlett, president, Container Laboratories, Inc., New York; Richard W. Lahey, American Cyanamid Co., New York; Stanley W. MacKenzie, director of purchases, U. S. Rubber Co., New York; Glenn Mather, paper converting division, Continental Can Co., Inc., New York; L. B. Steele, manager, promotion and advertising, Cellophane Division, E. I. du Pont de Nemours & Co., Inc., Wilmington; and Dr. Julian Toulouse, chief engineer, quality and specifications department, Owens-Illinois Glass Co., Toledo.

Canadian Carloadings

OTTAWA — The Canadian Government announces car loadings on the Canadian railways of woodpulp and paper dropped slightly to 3,915 cars in the week ended April 16 compared with 3,937 in the preceding week or 4,434 cars in the similar week a year ago, with the Eastern Division accounting for 3,419 cars in week ended April 16 against 3,378 in previous week or 3,895 last year and the Western Division for 496 cars in week ended April 16 against 559 in previous week and 462 last year.

Such car loadings from the beginning of 1949 until week ended April 16 declined to a cumulative total of 64,522 cars compared with 67,559 cars last year in same period, with the Eastern Division showing 56,194 cars as against 58,925 a year ago and the Western Division 8,328 cars compared with 8,634 last year.

Gilchrist to NBS Lab.

WASHINGTON—Dr. Raleigh Gilchrist has been appointed chief of the platinum metals and pure substances laboratory of the National Bureau of Standards.

For Washing deinked stock

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Calgon*

One of the major troubles in the washing of deinked stock is the deposition of hard carbonate scale on the wires of cylinder washers, on doctor boards and blades, in drain pipes and pumps.

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Inventory South's Forests

NEW ORLEANS—A new inventory of the forests of southern and eastern Arkansas got under way recently when timber cruisers of the Southern Forest Survey began work in Ouachita County.

State Forester Fred Lang joined with Director Charles A. Connaughton of the Southern Forest Experiment Station, New Orleans, in announcing the big cruise, second in the State's history. The Southern Station, a branch of the Forest Service of the U. S. Department of Agriculture, is making the survey in cooperation with the Arkansas State Forestry Division.

The field work will be done by four two-man teams under the direction of W. A. Johnson, who has set up temporary headquarters in Camden, Ark. After completing the pine-hardwood forests of the southern counties, the teams will move to the Delta region. The last area cruised will be the Ouachita Mountains, scheduled for completion about a year from now. A survey of Ozark timber was completed in 1948.

The aim of the cruise is to determine the amount, kind, location, quality, and rate of growth of the standing timber in the State. Along with the timber cruise, a survey will be made of the rate of use of standing timber for lumber, pulpwood, cross ties, fuel, and other purposes.

"With about 21,000,000 acres of forest out of a total land area of 34,000,000 acres, Arkansas is one of the most heavily forested States in the South," Mr. Lang and Mr. Connaughton said.

"All of the State except the Ozark region was first cruised by the Southern Forest Survey in 1935 and 1936. The figures published then are still in wide use, but the new survey is needed to show the changes brought about in the past 13 years, especially during the war."

Figures for the Ozarks have already been issued by the Southern Forest Experiment Station, Mr. Lang and Mr. Connaughton said, and a complete report for the entire State will be published when the current survey is finished.

"From this report, the residents of Arkansas will know the extent, condition, and value of their State's forest resources, how fast the trees are being cut, and how many are being lost through fire, insects, and disease. They will have the facts to judge how big a timber-growing job is ahead if Arkansas forests are to continue to grow the wood needed to keep the State prosperous.

"Pulp mills and other wood-using plants from all parts of the country often use Survey information in making plans to expand or build new plants in the South. State and Federal governments use the information in developing fire-protection systems, forestry plans, and other aids to forestry. Such things benefit all residents of the State, whether they own woodlands or not."

To cruise Arkansas' 21 million acres of forest in a reasonable time and at lowest cost, the cruising teams measure the trees on sample plots spaced regularly over the State at the rate of about 100 quarter-acre sample plots per county. The object is to size up the forests of the entire State, and no time will be spent in cruising individual holdings. No damage will be done to private property.

Aerial photographs help the cruisers to locate the sample plots. On each plot, they measure the height and diameter of the trees, determine species and rate of growth, and classify the sizes and kinds of trees suited for saw timber, pulpwood, cross ties, posts, and even firewood.

Given Safety Oscar

WASHINGTON—"Then It Happened," a Forest Service documentary film based on the Maine fires which occurred in the fall of 1947, has been awarded a Safety Oscar as the best 1948 motion picture in the field of general safety by the National Committee on Films for Safety, a division of the National Safety Council, the Forest Service in the U.S. Department of Agriculture was informed today.

Round Table Club

NEW YORK—Guest speakers at the 57th Baldwin Round Table Club luncheon sponsored by the Baldwin Paper Co., in the Wedgwood Room of the Waldorf-Astoria hotel on April 28 were Ernie Trotter, editor of *Printing Magazine*, and "Dumb" Dan Morgan, who has been in the Fight Business for 55 years. Mr. Trotter discussed impending postal legislation and Morgan reminisced about pugilists, from Jim Corbett and Bob Fitzsimons down to those of the present day. Attendance at the luncheon was "the largest ever", Baldwin's President Samuel S. Himmell, stated.

Conservation Workshops

MERRILL, Wis. — Inaugurating what is probably the first project of its kind in the country where teen-agers will attend conservation workshops on school time, 20 boys and ten girls from the Merrill high school on April 28 opened the 1949 season at the Trees for Tomorrow Conservation Camp at Eagle River.

During their three day field course, they will set the pattern for the 12 high schools throughout the state that have booked periods for spring workdrawn up by educators, representatives of the U. S. Forest Service, the State Conservation Department, and Trees shops through May 22. The program, for Tomorrow, stresses the inter-relationship of soils, water, forests and wildlife, demonstrating through tours Wisconsin's natural resources at work building a vast reservoir for tomorrow.

Groups will visit the Rainbow Flowage where they will study the Wisconsin River reservoir system and what has been happening to the ground water table for the past six years. They will visit beaver dams, the Star Lake Plantation, and a sawmill. They will see the Trout Lake and Hugo Sauer nurseries in action and make a tour of the state fish hatchery at Woodruff. At the Conover ranger station, special demonstrations will be staged to show forest fire fighting equipment in action.

In the Nicolet National Forest and the Consolidated Water Power and Paper Co.'s experimental forest, they will study the importance of a forest as an economic background to northern Wisconsin. Facts gathered in the workshop will be correlated with science and other subjects when the groups return to high school from camp.

Each group is limited to four field trips. A quiz is given and certificates awarded at the conclusion of the workshop.

At the close of the spring workshop session for high school students on May 22, other groups representing a cross-section of citizens from throughout the state have booked periods at camp through October 16. At this time the fall workshops will start again and run until November 15.

ECA Authorizations

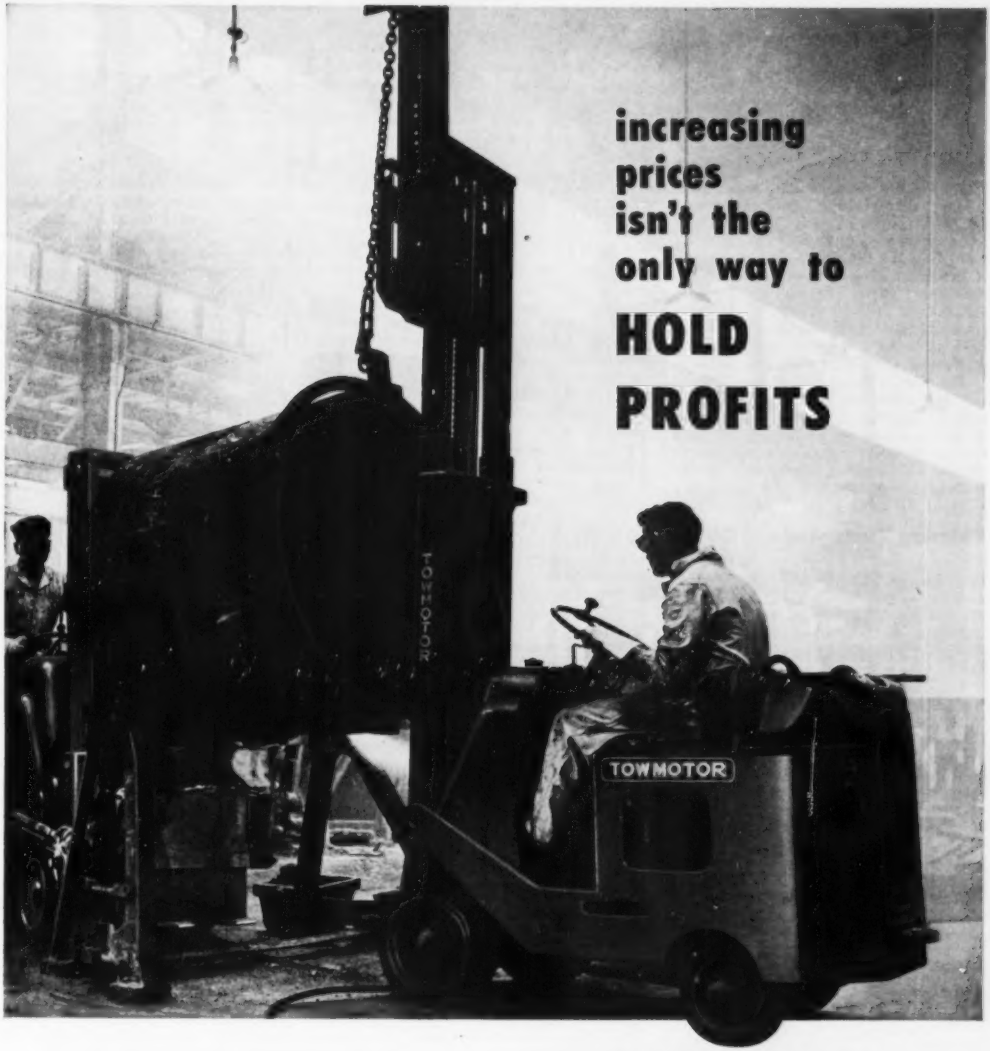
WASHINGTON—Ireland will receive newsprint totaling $277,000, to be procured in Canada, under an ECA authorization announced this week for the third quarter, 1949.

Other paper and related products authorized under ECA recently include: Newsprint, for Greece, $35,000, from Canada, and the following reductions in earlier authorization; Greece, pulp, paper and paper products, first quarter, 1949, $90,000, from Canada; from United States, first quarter, $113,000; for Netherlands, first quarter, $18,000 reduction in products originally ordered for procurement in this country.

For the fourth quarter this year, the ECA recently authorized paper, paper products and pulp, for Ireland, totaling $362,000, to be procured in Canada.

Asbestos Paper Stocks

OTTAWA—Canadian producers' shipments of asbestos paper stocks declined to 2,726 tons during February compared with 5,858 tons a year ago in the same month and dropped to a cumulative total of 8,911 tons in the first two months of 1949 as against 11,304 tons last year, the Canadian Government reports.



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Supt's. Power Meeting

NEW YORK—Roland A. Packard of the Bagley & Sewall Co., Watertown, N.Y., as Chairman of the Power meeting of the 1949 Convention of APPA has announced the program which has been developed for his meeting. It includes presentation of two papers and the showing of a colored sound movie on "Steam for Power".

One paper entitled "Lubrication and Its Effect on Paper Mill Operating and Maintenance Costs" will be a joint contribution of J. P. Critchlow and D. R. Kroell, both of the Gulf Oil Corp.; the other, "The Effect of Condensate and Air on Output, Quality and Steam Consumption of Paper Machine Dryers", is to be a contribution of Albert Milnes of the Sarco Co., Inc.

The film, "Steam for Power", making extensive use of both animation and photography, shows in concise form the evolution of boilers for both industrial and central station power plants. This movie, presented by the Babcock & Wilcox Co., has a running time of 41 minutes.

Chicago Tech. Ass'n.

CHICAGO—The April 18 meeting of the Chicago Technical Ass'n., of Pulp and Paper Industries held at the Merchants and Manufacturers Club, Merchandise Mart, covered the subject of "Tube Winding", featuring two speakers.

J. J. Callahan, manager of the Cleveland Container Co., Plymouth, Wisc., spoke on the growth of the tube-winding industry and Burger Graves, assistant sales manager of the Sefton Fibre Can Co., St. Louis, Missouri, spoke on both spirally wound and convolute wound fibreboard containers.

The next meeting of the organization will be held at the same location with dinner at 6:30 P. M., May 16 and will cover the subject "Adhesives", H. H. Snyder, publicity chairman, reports.

Ross in New Post

OTTAWA—Formerly with the Pulp and Paper Division, Forest Products Laboratory, Department of Mines and Resources, Dr. J. H. Ross, of Montreal, consulting chemist and partner in the firm of Donald, Ross & Co., consultant chemical engineers, has been appointed a member of the Board of Directors of the Crown-owned Canadian Arsenals, Ltd., the Rt. Hon. C. D. Howe, minister of trade and commerce, reports. In 1922, Dr. Ross was on the staff of the Pulp and Paper Division, Forest Products Laboratory, and later became the Director of the Division.

Export Decontrols

WASHINGTON—Gums, resins and tall oil are among some 500 items now freed of export control by the Office of International Trade. Also released are soda ash, wall board, many types of hard and soft wood logs, plasterboard, and others.

Western N. Y. TAPPI

NIAGARA FALLS, N. Y. — The final meeting of the season for the Western New York Group, Empire State section of TAPPI, has been scheduled for May 11 at the Prospect House. The Group will assemble at 6:45 p.m., with dinner scheduled for 7:15 p.m.

Following the dinner, J. D. Converse, manager of the development division of the chemicals department of Canadian Industries, Ltd., Montreal, will speak.

In 1948, Mr. Converse was appointed one of two Canadian employer delegates to the first meeting of the Chemical Industries Committee of the International Labor Organization. He reports that inasmuch as his paper will be semi-technical in nature, he has titled it "Fire and Brimstone." It will deal with the efforts of C.I.L., in conjunction with the Abitibi Power & Paper Co., to bring sulphur within the boundaries of Canada through utilization of waste sulphur dioxide in the manufacture of sulphite pulp.

Dr. J. S. Reichert of duPont de Nemours & Co., presiding, will request a report from the Nominating Committee, headed by J. W. Youngchild of the International Paper Co., and the members present will be asked to vote on the selections of the Nominating Committee for the officers to serve during the coming year.

Boston SAPI Chapter

BOSTON—An "organizational" meeting of the New England Salesmen's Ass'n. of the Paper Industry was held April 25 at 99 State street. Response of the 19 men attending, and of the many others who could not attend, indicates that a chapter will be started in New England.

Bud Miles of the Missisquoi Corp. handled the meeting and introduced the speakers. Paul Lowney of the Munro & Church Co. talked about the objectives. Dan Cheever of the Hollingsworth & Whitney Co. spoke about the committees required. George Watson of the Mead Paper Corp., vice-president of Eastern SAPI, gave a brief history of the Association and its activities. Plans were made to have a second "organizational" meeting to be held on May 23.

Restrictions End Near?

OTTAWA—A strong hint for the pulp and paper trade is contained in the report that, while refusing to make any direct forecast, W. T. Taylor, Deputy Chairman of the Emergency Import Controls Division, Canadian Government, told a meeting here of the Board of Trade that Canada was "a lot nearer to the end of the import restrictions than we were seventeen months ago". He contrasted the present reserves of $1,100,000,000 in United States dollars with the dwindling $500,000,000 at the end of November, 1947, when the import controls began.

Insurance Buyers Meet

NEW YORK—A national conference at Hotel Statler, May 26-27 of 600 buyers and administrators of insurance from all types of business firms to discuss the effect of changing economic conditions on company insurance programs has been scheduled by the Insurance Division of the American Management Ass'n.

The conference agenda will be based on a poll of more than 700 insurance executives throughout the country which showed the following subjects to be of primary concern to insurance buyers today:

(1) The effect of the changing business outlook on insurance coverage. (2) The impact of social legislation on insurance. (3) The effect of taxes on loss settlements. (4) Methods of evaluating a company's insurance program. (5) Adequate coverage for multiple location risks. (6) Retrospective rating of workman's compensation. (7) Availability and cost of ocean marine coverage.

Supt's. Auto Routing

PHILADELPHIA—If you are planning to go to the 1949 Convention of the American Pulp & Paper Mill Superintendents Ass'n., Inc., by automobile, E. O. Bretz, manager, Tourguide Bureau, Gulf Oil Corp., 1515 Locust street, states that his office will be glad to send you marked maps showing the best highway routes as well as literature on points of interest along the way. A leter or card addressed to Mr. Bretz requesting this service is all that is necessary to receive it. The maps and the literature are free for the asking.

Convention dates are June 15-17; the place, Chalfonte-Haddon Hall Hotel, Atlantic City, N.J.

Net Income Increases

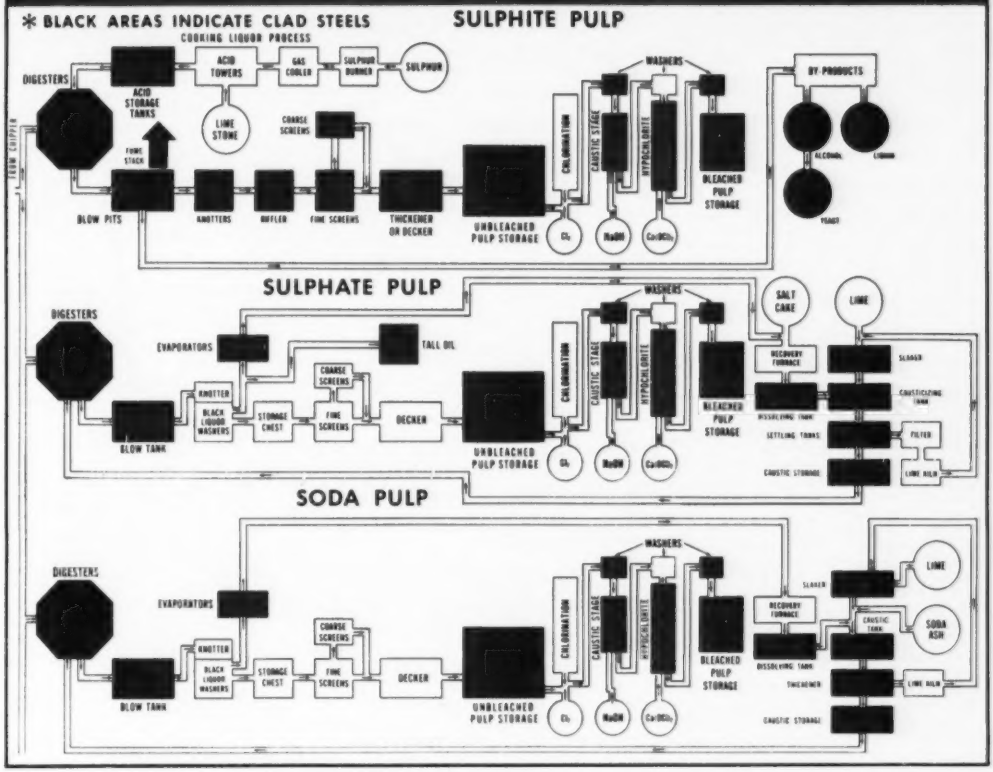
OTTAWA—Net income of farm operators from forest products during 1948 increased to a total of $60,108,000 compared with $52,406,000 in the preceding year, the Canadian Government reports.

By provinces, such income in 1948 showed the following, with 1947 figures in brackets: Prince Edward Island, $1,116,000 ($973,000); Nova Scotia $3,873,000 ($3,377,000); New Prunswick, $4,261,000 $3,715,000); Quebec, $22,466,000 ($19,587,000); Ontario, $17,972,000 ($15,669,000); Manitoba, $2,055,000 ($1,792,000); Saskatchewan, $3,511,000 ($3,061,000) Alberta, $2,995,00 ($2,611,000); British Columbia, $1,859,000 ($1,621,000); Canada, $6,108,000 ($52,406,000).

Trees Distributed

MERRILL, Wis. — Some 250,000 tree seedling trees are being distributed at 11 centers throughout the seven counties of the northern Wisconsin and Flambeau River Valleys under the Trees for Tomorrow plan.

Applications for *Clad Steels** in Paper-Pulp Making



Lukens Clad Steels—Nickel-Clad, Stainless-Clad, Inconel-Clad and Monel-Clad—are serving at many locations in the Pulp and Paper Industry, providing *solid* corrosion-resistant metal protection at the lower cost of *clad* steels. Your suppliers of processing equipment are familiar with their advantages. Many companies have standardized on Lukens Clad Steels wherever they have encountered trouble with corrosion.

The new Bulletin 470, "Product and Equipment Protection for the Pulp and Paper Industry", is just off the press. For a copy and for help on your corrosion problems, write Lukens Steel Company, 403 Lukens Building, Coatesville, Pennsylvania.

CLAD METAL STEEL

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STEELS

SOLID METAL ADVANTAGES WITH CLAD STEEL ECONOMY

Fourth Wage Round

NEW YORK—Despite lay-offs and cut workweeks, more than 95 percent of the employers negotiating contracts with unions are granting wage increases which average close to nine cents an hour.

This is the highlight of a survey of the fourth round of wage boosts at mid-point and was conducted by the wage research staff of the *Employee Relations Bulletin*, a management information service published by the National Foremen's Institute, 500 Fifth avenue.

The analysis covers over 1,200 wage settlements negotiated between unions and employers and includes the period from March 1 to April 15. The Institute's findings reveal:

(1) The decreases in the cost of living since last fall have not stopped the upward movement of wages as a result of collective bargaining. The 9 cents an hour figure which had marked the fourth round from its very beginning last September has been maintained despite a generally downward trend in the cost of living.

(2) Only 3% of the settlements result in either wage cuts or "no increases." The General Motors cost of living cut of 2 cents an hour has remained the outstanding deviation from the wage rise pattern. The GM Formula did not develop into a trend.

(3) In cases where negotiations result in no wage increases, 80% of the employers are giving additional fringe benefits in the form of extra holidays with pay and expanded vacations.

(4) Pension plans are appearing in fourth round settlements in significant number for the first time, but percentage-wise the figure is still very small. A little over 2 percent of the employers are initiating retirement plans. Most of these pension benefits are of the non-contributory kind which means that the employers are carrying the entire costs.

(5) 23% of the agreements settle for *more* than 9 cents an hour average. These above-average settlements occur mostly in non-manufacturing industries, where raises in the construction industry alone come to a 20 cents an hour average.

(6) Increases of 5 cents an hour or *less* are on the rise. During the first three rounds the 1 to 5 cent an hour settlement rarely appeared, but in the fourth round, 23% of the boosts are in the 5 cents an hour and under category.

Martin Named V.P.-S.M.

TORONTO—P. G. Martin has been elected vice-president and sales manager of the Thompson Folding Paper Box Co.

Pollution Control Hearing

PORTLAND, Ore. — The state sanitary authority on April 26 gave six Oregon cities 60 days to submit time schedules for sewage system construction and threatened court action if the cities don't comply.

The cities are Oswego, Albany, Corvallis, Sheridan, Toledo and Springfield. One city which had been requested to appear, Myrtle Creek, was absent at the hearing.

Appearance before the hearing of three pulp and paper companies drew another mention of possible court action and a statement from Blaine Hallock, authority member, that "I have yet to hear of a single constructive suggestion, except Weyerhaeuser's, from the pulp and paper industry in the ten years I have been on this authority."

Frank Youngman of the Crown Zellerbach Corp. reported that his firm is experimenting to find out whether it is practical to burn paper mill waste. He said the company should know in a month whether it is worth while to build a pilot plant for the process at a cost of $300,000 to $400,000.

"Do you think you are nearing a solution?" asked Harold Wendel, chairman of the authority.

"I think we are," replied Youngman. He pointed out, however, that he was unable to promise that Crown-Zellerbach will have a satisfactory waste disposal system in operation by the time Portland's sewage treatment project is finished.

Nils Teren, representing the Oregon Pulp & Paper mill at Oregon City, said "I am sorry to say we haven't any plans, or hardly any, for pollution control."

Mr. Teren said no adequate process has yet been discovered for the disposal of pulp and paper mill waste.

Mr. Wendel asked him whether Oregon Pulp & Paper will commit itself to the magnesium base process if it works at Longview. Mr. Teren said, "No, because we have no idea of the cost."

The Publishers' Paper Co., formerly the Hawley Pulp & Paper mill, took a similar position.

Mead Atlanta Meet

ATLANTA—The seventh annual executives' and mill managers' meeting of the Mead Corp. of Dayton, Ohio, will be held in Atlanta at the Biltmore Hotel May 5-7.

A highlight of the session will be a tour of the new mill of the Macon Kraft Co., at Macon, Ga., on May 6.

Executives from the firm's 14 manufacturing plants will participate in discussions of administration, research, manufacturing, industrial relations, marketing and selling, and public relations.

Heading the groups to attend the meeting are George H. Mead, of Dayton, honorary chairman of the board; Sydney Ferguson, of New York, chairman of the Board; C. R. Van de Carr, Jr., president; J. O. Mason, executive vice-president; J. E. Whitaker, D. R. Morris and R. H. Savage, vice-presidents; and J. H. Cunningham, comptroller, all of Chillicothe, O.

Executives connected with Mead-affiliated plants in Georgia who will be here include: Al H. Mahrt, of Chillicothe, president of the Macon Kraft Co.; H. A. Kidd, vice-president and general manager of Macon Kraft; A. W. Jones, board chairman of the Brunswick Pulp & Paper Co., Sea Island, and E. J. Gayner, III, vice-president and general manager.

The Mead Corp and Scott Paper Cos. are equal partners in ownership and operation of the Brunswick plant, while Mead and Inland Container Corp., are 60/40 percent partners in the Macon operation.

The two Georgia enterprises employ approximately 7,500 persons and manufacture pulp, paper, paperboard, and tanning extract. Payrolls total $3,420,000 annually; wood purchases are $8,951,000 annually. Investments in the state in plants, timberlands and other properties total $30,000,000. Mead employs 20 foresters in the state on its timberlands covering 300,000 acres.

No. 2 Overhauled

LONGVIEW, Wash. — E. E. Flood, president of the Pacific Paperboard Co., reports that operation of the company's No. 2 machine was resumed on April 25. The machine was down for two months for overhaul.

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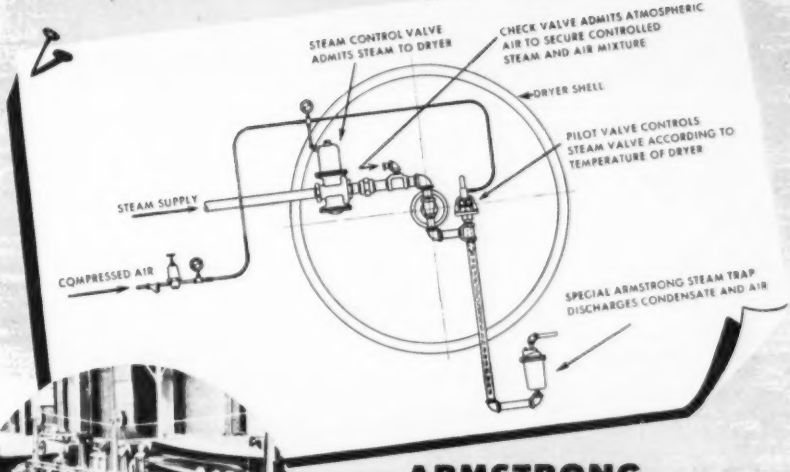
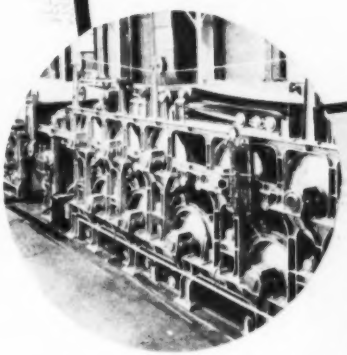
A NEW ANSWER
to an old drying problem


STEAM CONTROL VALVE ADMITS STEAM TO DRYER
CHECK VALVE ADMITS ATMOSPHERIC AIR TO SECURE CONTROLLED STEAM AND AIR MIXTURE
DRYER SHELL
PILOT VALVE CONTROLS STEAM VALVE ACCORDING TO TEMPERATURE OF DRYER
STEAM SUPPLY
COMPRESSED AIR
SPECIAL ARMSTRONG STEAM TRAP DISCHARGES CONDENSATE AND AIR



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- CONTROLLED MIXTURE OF STEAM AND AIR MAINTAINS REDUCED TEMPERATURES
- EACH DRYER CONTROLLED INDEPENDENTLY
- ACCURATE AND UNIFORM
- 100° F TO 250° F RANGE
- DEPENDABLE
- COMPLETELY AUTOMATIC
- PROVEN AND GUARANTEED

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Suppliers

Cochrane Corp., Philadelphia, has acquired substantially all of the capital stock of the Liquid Conditioning Corp., Linden, N. J. The latter firm will operate as a wholly-owned subsidiary of the Cochrane Corp., and the products of the former, comprising equipment for the conditioning of water and other liquids, marketed under the trade name "Liquon," will continue to be sold under that name. The engineering, sales and technical staffs of the two corporations will augment each other. S. B. Applebaum, one of the organizers of the Liquid Conditioning Corp. and an officer of that company, will be in charge of the cold water conditioning activities of both organizations, as well as the conditioning of liquids other than water. "Liquon" district sales offices are combining operations with existing Cochrane sales offices.

Robert L. Baldwin is now assistant to G. A. Wallerstedt, western district manager for the Hardinge Co., Inc., York, Pa. Mr. Baldwin will assist in sales development, using the Hardinge office at 24 California street, San Francisco, as headquarters.

A chart, which shows how American industrial firms can benefit by Marshall Plan sales to participating countries, has been prepared and released by the Westinghouse Electric International Co., New York City. The six-color, 30 by 40-inch chart entitled "The Marshall Plan Sales Planner" has been compiled with the aid of official ECA figures and estimates. It depicts graphically what types of products will be purchased under the Marshall Plan during 1949 and 1950, the approximate dollar volume of such purchases at current prices, and the percentage distribution of these products both as to source and as to destination. The chart outlines in graph form the 12 steps American suppliers should take to secure ECA orders and collect payment in dollars.

The Chemical Division of the Koppers Co., Inc., Pittsburgh, has opened a New England district sales office at 250 Stuart street, Boston, with J. W. LaBelle in charge as manager of the new sales district. The new office is in the same quarters with those of the Koppers tar products and wood preserving divisions.

Donald Williams has been advanced by the Dow Chemical Co., Midland, Mich., from general sales manager to director of sales, the latter position having been vacated by Leland I. Doan when he stepped into the presidency on April 5, following the death of Dr. Willard H. Dow. Donald K. Ballman, former assistant general sales manager, is now general sales manager and Dr. L. S. Roehm is assistant general sales manager. Dr. Roehm previously was in charge of Dow's technical service and development division and will continue also in this capacity.

A Color Guide for Boxboard has just been introduced by IPI, New York City. It is for package printers, designers and production men. Pocket size, it shows 40 colors (varnished and unvarnished) on both clay coated and patent coated board. In addition to the 80 color specimens, there are four pages of information and suggestions for package printers. Included is a check list for packaging ink and an explanation of color measurement and control.

Shartle Bros. Machine Co., Middletown, Ohio, has been awarded the contract for all pumps and agitators required by the Ruberoid Co. for its new roofing mill at Mobile, Ala. Also, to Shartle Bros. went the contract from Gulf States Paper Corp., Tuscaloosa, Ala., for all pumps for Gulf's new bleach plant. Gulf also ordered a broke Hydrapulper from Shartle's to be installed in this plant.

A. T. Davis, for the past ten years assistant to the manager of the manufacturing industries division of General Electric's apparatus department, is retiring from the company, effective April 30. During his 42-year career with G.E., Mr. Davis was actively associated with the pulp and paper industries, especially in his capacity as assistant to W. W. Cronkhite and K. R. Ross.

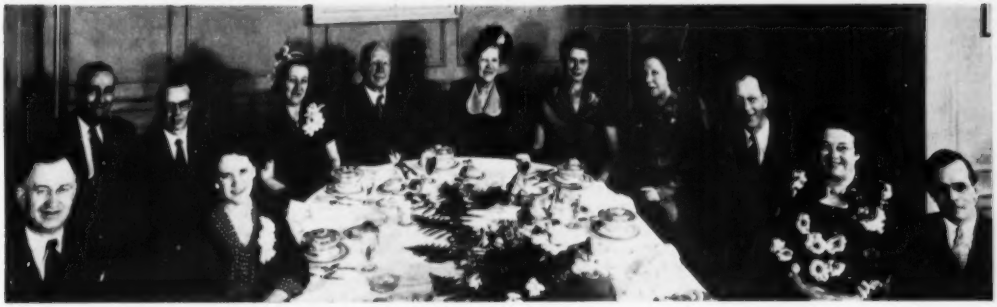
B. F. Goodrich Co. is offering all who ask for one, a copy of its 1949 Baseball Guide, free of charge. The Guide presents playing schedules of the American and National Leagues, the American Ass'n., Pacific Coast League, International League and Southern Ass'n. It also contains 1948 playing records. The Guide was compiled by "Suz" Sayger, sports commentator.

Baker Industrial Truck division of the Baker-Raulang Co., Cleveland, has moved its general offices, including the purchasing, sales, engineering and service departments to 1250 West 80th street. The division's manufacturing operations, presently located at the West 25th street plant, will be moved to the 80th street location in the near future.

Harold A. Sholl, paper industry engineer of the Brown Instrument division of the Minneapolis Honeywell Regulator Co., spoke on "Instrumentation for Paper Making and Converting" at the meeting in the Shartle

WORTHINGTON HOST TO MASS. U. SENIORS

Thirteen mechanical engineering students of the senior class, University of Massachusetts, visited the Worthington Pump & Machinery Corp. Holyoke Works, where Worthington product and research engineers offered instruction to supplement the regular university curriculum. . . To overcome a partial loss by fire of the university's engineering laboratory facilities at Amherst, Mass., university officials have arranged visits by the students to nearby industrial manufacturing plants. . . The group, accompanied by two faculty members, Prof. W. H. Weaver and Prof. Chester H. Wolowicz, were officially welcomed to the Worthington plant by E. M. Detwiler, works manager. Illustrated talks were given on the theory and engineering of air compressors and refrigeration compressors.



ROSS 25-YEAR CLUB FETES R. W. GROTT

To celebrate his 25th year with the J. O. Ross Engineering Corp., R. W. Grott was guest of honor at a dinner of the Ross 25-year Club at the Roosevelt Hotel, on April 20. . . Mr. Grott began as a draftsman with the company in 1924, and is at present an executive in the engineering and purchasing department. In addition to Mr. and Mrs. Grott, other members of the club and their wives who were present included—J. O. Ross, chairman of the board; Mrs. Ross; President S. W. Fletcher; Mrs. Fletcher; Vice-President A E. Montgomery of Chicago: Mrs. Montgomery; Vice-President F. W. Partsch of Boston; Mrs. Partsch; R. E. Schultz; and Mrs. Schultz. . . Mr. Ross presented a watch to Mr. Grott to commemorate the event. . . The gentlemen in the picture are, from left to right, Messr's. Fletcher, Partsch, Schultz, Ross, Montgomery and Grott.

Classroom of Shartle Bros. Machine Co., Middletown, Ohio, on April 11. Speaker at the May 3 meeting was L. P. Thompson, production manager of the Personal Products Corp., Milltown, N. J. His subject: "Manufacture of Tissue Paper." Final lecture of the current season will be given on May 24, when C. M. Connor, manager of research and development of the Ohio Boxboard Co., Rittman, Ohio, will have for his subject: "Manufacture of Glassine and Greaseproof Papers."

Carl F. Fogarty of Carthage, N. Y., and Nelson J. Malboeuf of Natural Bridge, N. Y., as partners, have leased the foundry of Ryther & Pringle. William G. Lewis of Watertown and Walter Clinch of Carthage, who purchased the company a few months ago, will continue management and operation of the machine shop.

Clarence E. Kinne, Watertown, N. Y., former president of the Bagley & Sewall Co., manufacturer of papermaking machinery, observed his 80th birthday last week. Mr. Kinne began his service with Bagley & Sewall in 1893.

The first U. S. showing of the Holweg, Strasbourg, France, Roto-Simplex combination envelope flat-and-square bag machine with four-color analine printer will be made with the machine in operation at the National Packaging Exposition, Atlantic City, May 10-13, by the Bagprint Machinery Corp., Royal Oak, Mich.

Sale of 17 new Black-Clawson spiral bevel gear drives to the Philip Carey Mfg. Co., Lockland, Ohio, is reported by the builder, the Black-Clawson Co., Hamilton, Ohio. This equipment is destined for the Lockland plant's machines Nos. 2, 3 and 4 and is being installed as fast as mill operating conditions permit.

General Electric Co. will establish a new apparatus service shop and warehouse in Richmond, Va., late this summer, H. V. Whitney, manager of the company's apparatus office in that city, reports. The shop will service and repair motors, generators, transformers, control devices, switchgear, and related apparatus.

B. F. Goodrich Chemical Co., Cleveland, will exhibit Geon polyblends and latices at the National Packaging Exposition at Atlantic City, N. J., May 10-13.

WINES JOINS MAIN

Walter E. Wines, who retired on November 1 as manager of the mechanical department of the ANPA, is now associated with Chas. T. Main, Inc., Boston, as consultant in the preparation of studies, plans and specifications, and engineering of newspaper, printing, and publishing plants.

ORR FELT ADVANCEMENT

John W. M. Jamieson has been named general superintendent of the Orr Felt & Blanket Co., Piqua, Ohio. . . Previously he was successively with Horner Bros. Woolen Mills, and Penmans, Ltd.

CLINTON UPS NEWTON

Dr. J. M. Newton has been named director of the technical sales service department of Clinton Industries, New York. . . Previously he was research supervisor.

PENNSALT CHANGES

George B. Beitzel (left) was elected president of the Pennsylvania Salt Mfg. Co., Philadelphia on April 27 on the eve of its 100th anniversary year, succeeding Leonard T. Beale, president for the last 20 years, who will continue with the company as chairman of the board. . . At the same time, William P. Drake (right) was elected vice-president in charge of sales, and William F. Mitchell vice-president in charge of manufacturing. . . Mr. Drake, assumes the position left vacant when Mr. Beitzel became executive vice-president. . . Mr. Mitchell, succeeds Y. F. Hardcastle, who retires from active participation in the chemical company's operation but who remains as a member of the board. . . Mr. Beitzel and Fred C. Shanaman, president of Pennsylvania Salt Mfg. Co. of Washington, wholly-owned West Coast subsidiary, were elected to two new directorships created at a recent meeting of the board. Mr. Shanaman also is a vice president of the parent company. . . The retiring vice president, Mr. Hardcastle, the oldest Pennsalt officer in point of service, began as a draftsman in the engineering department at Wyandotte in 1909.

Letters

Gentlemen:

Systematically reading your attractive "Paper Trade Journal" we have found that on page 50 of this journal's 27 January 1949 issue there is, under the heading of "Alcohol from Sulphite Liquor," a notice stating that Commercial Alcohols Ltd. has officially opened its large alcohol plant which has been built near the Canadian International Paper Company pulp mill on the Gatineau River in Quebec.

This plant is said to have a capacity of 2 million Imperial gallons annually, and, in this connection, a statement is made to the effect that this plant is the "world's largest plant of this kind."

In view of this statement, we should like to draw your attention to the fact that, in the very period following World War I, very large alcohol plants have also been built in Europe, that is in Sweden and Germany, some of these plants having about the same size.

The capacity of Zellstofffabrik-Waldhof's alcohol plant at Mannheim amounts e.g. to 2.2 million Imperial gallons. As a matter of fact, 2,065,000 Imperial gallons of alcohol were, e.g. in 1936, produced by this plant. In this connection, it might be well to point out that, in Germany, the statement of production are based on a pure alcohol (thus 100 per cent) as against the commercial product having no more than 94 per cent by weight of pure alcohol.

Similarly, Zellstofffabrik-Waldhoff's Tilsit mill (East Prussia) had a very large alcohol plant, its capacity amounting to 1.7 million Imperial gallons. Moreover, this mill used to process the alcohol production of the neighboring Ragnit mill into absolute alcohol, whereby the annual production of the Tilsit mill's alcohol plant came, e.g. in 1938, up to roughly 2.4 million Imperial gallons of absolute alcohol.

From the figures as stated above, you will kindly infer that the statement of Commercial Alcohols, Ltd.'s new alcohol plant being the world's largest plant, is not borne out by the facts.

Assuming that this information will be of some interest to you, we remain,

DR. WERNICKE & DR. SCHMIDT
Zellstofffabrik Waldhof
(16) Wiesbaden
Leberberg 9,
Germany

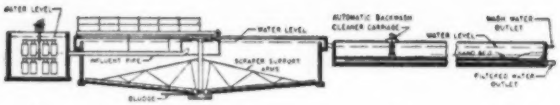
* * *

Gentlemen:

I would like to call your attention to an article on page 13 of the April 21st issue of the PAPER TRADE JOURNAL entitled "Honor Paper Concerns." This article would certainly lead the public to believe that Strathmore and the Paper House of New England shared top honors in the Fifty Book Show. I am enclosing a catalog herewith. If you will turn to the back page and read the names under Paper Makers, you will note that S. D. Warren are in first place and Curtis Paper Company in second place. It seems to me that a correction might be in order.

ALLEN F. HORTON
President
Curtis Paper Co.
Newark, Delaware

WATER AND WHITE WATER
TREATING EQUIPMENT BY
HARDINGE



FLOCCULATING EQUIPMENT

Slowly rotating paddles hold solids in suspension—create optimum flocculating conditions. Usually followed by a clarifier in raw water treatment as shown in the typical water treatment flow diagram above. Bulletin 35-C-14.

AUTOMATIC BACKWASH SAND FILTERS

An entirely new type of sand filter with a traveling backwash mechanism which cleans the filter bed, automatically, without shut-down or change-over. Highly efficient in extracting fine suspended matter from paper mill water supply. Ideal for reclaiming solids from "white water," leaving the filtered water sufficiently clean for re-use on showers. Bulletin 46-14.

CLARIFIERS

In the circular model, double-spiral or cut-flight scrapers remove settled solids quickly at the tank center. The rectangular model is designed for limited spaces or where sludge delivery is desired at one end of the tank. For removal of settleable solids from waste water and mill water supply. Bulletin 35-C-14.

HARDINGE
COMPANY INCORPORATED
YORK, PENNSYLVANIA — 240 Arch St. • Main Office and Works
NEW YORK 17—122 E. 42nd St. • 205 W. Wacker Drive—CHICAGO 6
SAN FRANCISCO 11—24 California St. • 200 Bay St.—TORONTO 1

Two New Riegel Directors

NEW YORK—Riegel Paper Corp., elected Robert H. Evans, secretary of the company, and Ward Harrison, manager of production, as new directors at the annual meeting on April 26 in Riegelsville, N.J. They also re-elected seven directors and heard reports on operations for 1948 and early 1949 from officials of the company.

The seven directors reelected are John L. Riegel, president; Walker Hamilton, executive vice-president; Aaron P. Mitchell, vice-president; German H. H. Emory, assistant-treasurer, who is executive vice-president of Riegel Textile Corp.; Theodore Riegel, assistant secretary; G. Lamont Bidwell, manager of the company's Milford, N.J., mill; William H. Radebaugh, legal counsel.

Stockholders were served a buffet luncheon at the Riegel Ridge Community Center near Milford, N.J., before the meeting and after the meeting they toured the company's Warren and Milford mills.

World Pulp Conference

(Continued from page 9)

merce: F. L. Mitchell, W. H. O'Reilly, C. S. Pincott, Harold S. Foley, and J. O. Chenevert of the Canadian Pulp & Paper Ass'n.; E. M. Little of the Anglo-Canadian Pulp & Paper Mills, Ltd.; C. M. Matheson of the Fraser Companies, Ltd.; and Prentice Bloedel of Bloedel, Stewart & Welch, Ltd.

Obituary

Alfred Kinn, retired vice-president of the J. E. Linde Paper Co., New York City, died at his home in Montclair, N. J., on April 22. Mr. Kinn was with Linde for 51 years when he retired in 1936. Surviving him are three sons, Alfred, Jr., Richard E., and Edwin W.; three daughters, Mrs. Marie T. Trost, Mrs. Louis V. Maloney and Mrs. Audrey Kelly; and two brothers, Joseph and William.

DeWitt Tower, head of the Tower Paper Box Co., Spencer, Mass., died on April 13. Surviving him is a son, Raymond, who has been associated with the firm since graduating from Worcester Polytechnic Institute and who will carry on the business.

George W. Steele, 83, formerly New England district representative of the Imperial Paper & Color Works, Glens Falls, N. Y., for 40 years, died in Boston on April 25.

C. Neal Barney, 73, vice-president, secretary and general counsel of the Worthington Pump & Machinery Corp., 2 Park avenue, New York City, died at his home in nearby Scarsdale on April 24. Mr. Barney joined Worthington in 1918 as chief counsel and secretary; he was named secretary-treasurer in 1932 and was elected vice-president and secretary in 1942.

William J. Norton, 54, treasurer of the American Writing Paper Corp., died in Holyoke Hospital of a cerebral hemorrhage on April 27. He joined the firm in 1915 as assistant advertising manager. Surviving him are his widow, the former Estelle S. Murray; a daughter, Barbara Ann; and a brother, James E. Norton.

Irving L. Burrows, 62, former manager of the products engineering division of the Behr-Manning Corp., Troy, N. Y., died in Samaritan Hospital on April 11. Mr. Burrows joined the Manning Abrasives Co., a predecessor of Behr-Manning, in 1922.

Bert R. Gray, former head of Allen & Gray, Brooklyn, N. Y., paper merchant firm, died at his summer home in Pocono Manor, Pa., on April 20. Surviving is his widow, Mrs. Nellie Hyer Gray.

Bart W. Charles, 45, a foreman in the machine room at the Ecusta Paper Corp., Brevard, N. C., died on April 25. Surviving are his widow and two sons.

James P. Horton, 74, for the past 20 years sample clerk of the United Board & Carton Corp., Lockport, N. Y., died on April 25 of a heart attack. Mr. Horton has been with the firm for almost 60 years. Surviving him are two daughters, Mrs. Thomas Gaygen and Mrs. Marie Denniston; and a son, William J. Horton.

T. Carlisle Mitchell, 65, founder and for many years vice-president of the Federal Container Co., Philadelphia, died in Baltimore on April 24. Mr. Mitchell retired in 1943. Surviving are his widow, Mrs. Adaline Mitchell, and his mother.

Walter J. Stinson, 50, mill manager of the Rocton Felt & Paper Co., Rocton, Ill., died unexpectedly of a heart ailment at his home in Beloit, Wis., on March 31. Mr. Stinson was formerly with the Eddy Paper Co., White Pigeon, Mich., for 23 years.

Mazer Aiding UJA

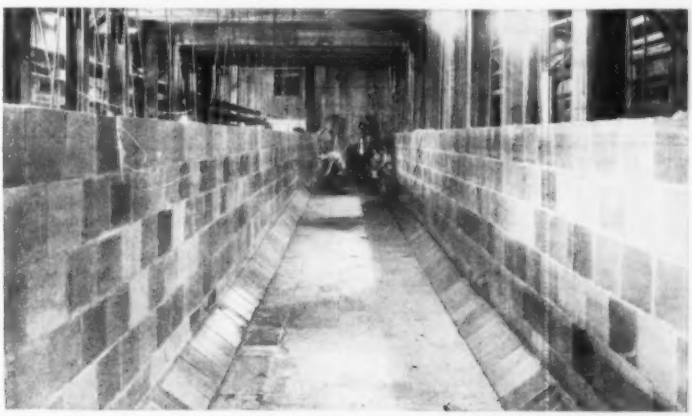
NEW YORK—Joseph Mazer, of the Hudson Pulp & Paper Co., has been named chairman of the National Paper Division of the United Jewish Appeal.

Wagner Erecting Building

BUFFALO, N.Y.—Victor Wagner & Son will build a $20,200 factory structures at 121 Ash street.

Tile Chest

78 feet long



another use for KALAMAZOO GLAZED TILE

KALAMAZOO TANK and SILO CO.
KALAMAZOO, MICHIGAN

Inside view of a tile chest in course of construction, 78 ft. long, 17 ft. wide and 14 ft. high. Propeller agitator is located at each end.

Slick glazed walls assist agitation in this chest and it can be easily flushed down with a hose—requires no maintenance—and has extreme loading carrying strength.

Specify Kalamazoo Glazed Tile for large-capacity chests.

YES! GO WEST! 1949 FALL MEETING TAPPI, PORTLAND, OREGON

Australia

Imports of newsprint into Australia during December, 1948, totalled 5,795 tons compared with the 12,248 tons of December, 1947. There were no imports of paper of any description from the United States during this month.

* * *

Steadily increasing demand within Australia for papers, together with the limitation on imported supplies from dollar areas, has led to more and more projects being launched in Australia to meet both present and future requirements. In all, 97 companies have made known their intentions of starting new or expanding present operations, the total capital expenditure being £14,900,000. Eight of the companies interested are overseas concerns—four from the United States, three from Britain, and two European.

In a review of post-war developments the Division of Industrial Development gives the following summarized details:

Australian Paper Manufacturers, Ltd.—Operates five paper mills, total output in 1947 being 124,495 tons. Nominal capital is £10,000,000, and expenditure of over £4,000,000 is being directed toward plant expansion (with a new Queensland mill costing £750,000).

Australian Newsprint Mills, Ltd.—Launching a £3,000,000 development scheme, extending over the next four years.

Associated Pulp & Paper Mills, Ltd.—Nominal capital £5,000,000. Now linked with Thomas Owen & Co. Ltd., of Cardiff, Wales.

Cellulose (Australia), Ltd.—Produces 10,000 tons of manilla and other paper-board products yearly, and plans extensions in research and plant capacity at a cost of £20,000.

* * *

Sir Keith Murdoch has resigned, owing to ill health, from the chairmanship of Australian Newsprint Mills, Ltd., a position he has held since the formation of the company in 1936. He

INDUSTRIAL PRODUCTION, BY INDUSTRIES

(Without Seasonal Adjustment)

[Index numbers of the Board of Governors, 1935-39 average = 100]

Source: Federal Reserve Bulletin, April, 1949

	1948											1949	
Industry	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.
Paper and Paper Products	*163*	*167*	*169*	*170*	*165*	*149*	*165*	*165*	*172*	*169*	*153*	*163*	*p 162*
Paper and pulp	159	160	163	164	160	145	160	159	167	163	149	157	*p* 158
Pulp	178	179	182	188	183	170	191	181	194	189	173	189	...
Groundwood pulp	98	96	107	112	107	104	107	103	109	110	107	105	...
Soda pulp	110	103	108	112	111	96	110	107	111	107	104	107	...
Sulphate pulp	269	285	293	309	301	283	328	301	330	317	285	327	...
Sulphite pulp	161	153	151	151	146	135	148	145	153	149	137	145	...
Paper	156	157	160	160	156	141	155	156	163	159	146	*r* 153	153
Paper board	179	192	192	191	187	165	184	189	193	195	167	182	174
Fine paper[1]	88	85	87	86	86	74	83	83	...	...	...	...	...
Printing paper	170	161	166	169	168	150	160	161	172	165	160	*r* 157	161
Tissue and absorbent paper	167	161	173	169	160	153	161	163	172	162	153	*r* 159	166
Wrapping paper	150	148	151	150	145	135	153	148	157	150	142	*r* 149	155
Newsprint	83	82	91	95	95	91	95	93	96	95	98	99	98
Paper containers (same as Paperboard)	...	...	...	...	...	...	...	...	...	...	...	...	...

p Preliminary. *r* Revised. [1] This series is in process of revision.

NOTE.—For description and back figures see BULLETIN for October 1943, pp. 940-984, September 1941, pp. 878-881 and 933-937, and August 1940, pp. 753-771 and 825-882.

HOURS AND EARNINGS OF PRODUCTION WORKERS IN MANUFACTURING INDUSTRIES

[Compiled by the Bureau of Labor Statistics]

	Average hours worked per week							Average hourly earnings (cents per hour)						
	1948					1949		1948					1949	
Industry group	Jan.	Feb.	Oct.	Nov.	Dec.	Jan.	Feb.	Jan.	Feb.	Oct.	Nov.	Dec.	Jan.	Feb.
All manufacturing	*40.5*	*40.2*	*40.0*	*39.8*	*40.0*	*39.4*	*39.4*	*1.285*	*1.287*	*1.366*	*r 1.372*	*1.376*	*1.381*	*1.377*
Durable goods	*40.9*	*40.8*	*40.9*	*40.4*	*r 40.7*	*40.1*	*39.8*	*1.355*	*1.352*	*1.452*	*1.454*	*r 1.456*	*1.459*	*1.458*
Nondurable goods	*40.0*	*39.9*	*39.1*	*r 39.1*	*39.3*	*38.7*	*39.0*	*1.210*	*1.217*	*1.271*	*1.282*	*r 1.287*	*1.294*	*1.290*
Paper and allied products	43.1	43.1	42.9	42.9	*r* 42.6	41.6	41.2	1.235	1.245	1.328	1.336	1.330	1.339	1.340

r Revised.

NOTE.—Figures for February 1949 are preliminary. Back figures are available from the Bureau of Labor Statistics.

FACTORY EMPLOYMENT AND PAY ROLLS, BY INDUSTRIES

(Without Seasonal Adjustment)

[Index numbers of the Bureau of Labor Statistics, 1939 = 100]

	Factory employment							Factory pay rolls						
	1948					1949		1947	1948					1949
Industry group or industry	Jan.	Feb.	Oct.	Nov.	Dec.	Jan.	Feb.	Dec.	Jan.	Feb.	Oct.	Nov.	Dec.	Jan.
Paper and Allied Products	*148.7*	*147.8*	*151.0*	*151.7*	*151.1*	*147.5*	*148.0*	*334.0*	*328.0*	*328.9*	*357.4*	*362.2*	*356.5*	*342.6*
Paper and pulp	147	147	150	150	150	148	....	333	330	334	359	365	358	350
Paper goods, n.e.c.	166	164	168	169	168	165	....	362	355	353	381	393	395	381
Paper boxes	141	139	144	146	144	136	....	322	309	307	342	345	335	306

NOTE.—Underlying figures are for pay roll period ending nearest middle of month and cover production workers only. Figures for February 1949 are preliminary. Back data and data for industries not here shown may be obtained from the Bureau of Labor Statistics.

states that the Australian production of newsprint is expected to reach 80,000 tons by July or August, 1950. "But because of labour and material shortages we are about six months behind schedule," he adds, "and each week's delay is costing the company about £40,000."

* * *

A co-operative gesture has been made to the Australian Standards Ass'n, by the Australian Pulp & Paper Industry Technical Ass'n, in the shape of an offer of collaboration on standard specifications and methods of test which the testing committee of the APPITA is now drafting. A large range of standards is projected, under six general classifications.

* * *

H. D. Giddy, the new chairman of Australian Newsprint Mills, Ltd., Boyer, Tasmania, and S. L. Kessell, managing director, recently paid a visit to New Zealand in connection with the agreement between New Zealand Forest Products, Ltd., and A.N.M. (Under this agreement the Australian mills undertook to take 12,500 tons of pulp yearly for at least 20 years). Mr. Giddy declined to say whether he knew of any plan to manufacture newsprint in New Zealand, but he declared that Australia, in all probability, would never be completely self-supporting in newsprint supplies.

* * *

The Western Australian Director of Industrial Development (N. Fernie) states that efforts to induce Australian firms to establish a Westralian factory for the manufacture of hardboards have so far failed. He adds: "The paper pulp industry offers possibilities for establishment in the extreme south of the State, preferably combined with a hydro-electric project."

* * *

Newspaper News recently invited S. L. Kessell, of A.N.M., Ltd., to compare Australian and overseas methods of utilizing forest resources. Mr. Kessell says: "Forest utilization is much more highly developed in the northern hemisphere than in Australia. The main reason for this is the greater demand resulting from bigger centers of population, but another very important reason is that it is easier to make paper from softwoods than from our hardwoods. . . .

"The stage has been reached in Sweden when forests are more valuable for pulp and other cellulose products than for lumber. . . . These developments have proved possible while still taking care of the timber needs of the country and have meant greater prosperity to the regions concerned. A start along similar lines has been made in a modest way in parts of Australia, and the ingenuity and enterprise of Australian chemists and engineers is steadily overcoming the technical problems of making the numerous chemical products of high value from our timbers. . . . It is very encouraging to find that the manufacture of a number of large items of machinery which my company has an order in England and Canada is well advanced, and that deliveries in most cases will be ahead of what the firms concerned were able to offer twelve months ago."

* * *

Edwards Dunlop & Co., Ltd., Sydney paper merchant firm, intends to increase subscribed capital to £551,158 by issuing 100,000 shares of £1 each at a premium of £1.

Cotton Waste Imports

WASHINGTON—Preliminary data on imports of cotton waste against quotas from various foreign areas, reported by the Bureau of Customs, show the following:

From British India, established quota, under 1⅛ inch, other than rough and harsh under ¾ inch, 2,003,483 pounds; imports September 20, 1948, to April 2, 1949, 291,873 pounds; from Peru, quota, 247,952 pounds, imports, same; from Mexico, quota, 8,883,259 pounds; imports, 4,749,578; Brazil, quota, 618,723; imports, 460,040 pounds; U.S.S.R., quota, 475,124 pounds, imports, 281,074 pounds.

Imports in the same period, of 1⅛ but less than 1-11/16 of inch, for which an overall quota is 45,656,420 pounds, showed 44,117,797 pounds from the Sudan, 932,440 pounds from Peru, and 606,183 from Mexico. Imports of less than ¾ inch showed 15,385,506 pounds from India.

Joint Accident Prevention

NEW YORK—The American Paper & Pulp Ass'n., in cooperation with the American Pulp & Paper Mill Superintendents Ass'n., recently formed a Joint Safety Committee to assist mills in lowering the frequency and severity rates in the paper industry, APPA President Cola G. Parker reports. This committee will not duplicate the efforts of the National Safety Council or other safety organizations but will cooperate with them. "The accompanying tabulation compares the pulp and paper industry's record with the yearly averages for all industries and clearly indicates that earnest effort should be made to make our employees more safety conscious," Mr. Parker said.

"To make the committee work as effective as possible we seek the active support of every company president. We ask your cooperation in this endeavor. The only information we require is the number of man-hours worked and the number of lost-time accidents for each mill. The committee in its turn will send reports and bulletins from time to time, safety films and other material are to be available on a loan basis and other helpful information may be available on request. This is done on a no-cost basis.

"We invite you to cooperate with us in this endeavor to lower the frequency and severity rates in our industry."

Frequency and Severity Rates
Mills Reporting to National Safety Council, 1930-1947

Year	Pulp & Paper Frequency Rate	Average F.R. For All Industries	Pulp & Paper Severity Rate	Average S.R. For All Industries
1930	23.65	18.47	1.85	1.95
1931	20.62	15.12	1.52	1.72
1932	17.77	13.20	1.92	1.59
1933	19.47	14.56	1.70	1.59
1934	19.07	15.29	1.95	1.70
1935	17.12	14.02	1.94	1.58
1936	17.59	13.57	1.55	1.61
1937	18.45	13.85	1.97	1.58
1938	15.33	12.18	1.18	1.53
1939	15.17	11.83	1.72	1.42
1940	15.38	12.52	1.64	1.44
1941	17.37	15.39	1.66	1.53
1942	21.52	14.85	1.74	1.49
1943	21.52	14.52	1.71	1.20
1944	21.28	14.46	1.73	1.21
1945	20.52	13.63	1.42	1.16
1946	22.27	14.16	1.63	1.28
1947	18.32	13.26	1.39	1.23
1948		Rates not yet available		

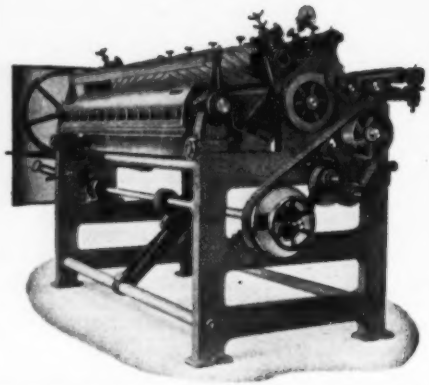
Industries which have had better-than-average rates *for the past five years* include—Communications, Electrical Equipment, Tobacco, Steel, Cement, Aircraft Mfg., Chemical, Automobile, Glass, Textile, Printing and Publishing.

Opposes Postage Hike

WASHINGTON — Opposition to the proposed increase in postal rates has been registered by Paul L. Phillips, Albany, N. Y., president of the International Brotherhood of Paper Makers, before the Senate Post Office Committee. The effect of the bill "would be to cause suspensions, forced sales, and mergers throughout the publishing field," Mr. Phillips said.

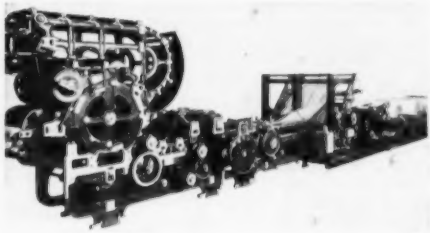
MODEL 28

ROLLER BEARING CUTTER



HAMBLET MACHINE CO.
LAWRENCE, MASS.

MAKERS OF
SINGLE, DUPLEX AND DIAGONAL PAPER CUTTERS
CUTTER KNIVES, PATENT TOP SLITTERS



Machine illustrated is a large S.O.S. Multiwall unit capable of making a maximum size bag 19" x 14" x 64".

Weber machines are known throughout the world.

Write in requesting our bulletin describing the complete line of Weber machines.

H. G. WEBER & CO., INC.
KIEL, WIS., U.S.A.

UNITED BLACKS

DIXIE
KOSMOS
PARIS BLACKS

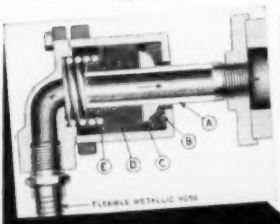
Carbon blacks for all paper and board stocks—outstanding soft texture, particle fineness and jet black color. Takes well to the fiber, shows high retention.

Best for performance in the Beater and Jordan because of ease of wetting and ready dispersion in the furnish.

UNITED CARBON COMPANY, INC.
CHARLESTON 27 WEST VA.
AKRON
NEW YORK
CHICAGO
CANADA:
CANADIAN
INDUSTRIES, LIMITED

NOW . . . *Self-Supporting, too*

In one sense, in its ability to pay its own way, the Johnson Joint has always been self-supporting. Its packless, self-lubricating, self-adjusting design slashes maintenance costs, boosts operating efficiency. Now, to crown all these virtues comes the new Type S, which needs no external supports. It's the final answer for those tough jobs such as calender service . . . shifts as the roll shifts to end completely the life-shortening wear that rides along with misalignment.



Nipple (A) is fastened to roll or drum. Carbon-graphite ring (B) effects seal against rotating collar (C). Guide (D) supports joint, is also of self-lubricating carbon-graphite. Spring (E) is for initial seating only; in operation joint is pressure-sealed.

Write for complete facts

THE NEW
JOHNSON TYPE-S
Rotary Pressure **JOINTS**

The JOHNSON CORPORATION, 828 Wood Street, Three Rivers, Mich.

Supplying Your Requirements

AMERICA'S LEADING INDEPENDENT WASTE PAPER PACKERS

WASHINGTON, D. C.
PHILADELPHIA, PA.
NEW YORK, N. Y.

THOMAS PAPER STOCK COMPANY
860 W. Evergreen Avenue • Chicago 22, Ill.

Price & Pierce ltd
Pulp & Paper agents
60 E.42 ST. N.Y. 17.

WEST VIRGINIA PULP and PAPER COMPANY

230 Park Ave.
New York 17, N. Y.

35 East Wacker Drive
Chicago 1, Ill.

Public Ledger Building
Philadelphia 6, Pa.

503 Market St.
San Francisco 5, Calif.

Manufacturers of West Virginia Mill Brand Papers

SUPERCALENDERED	ENVELOPE
ENGLISH FINISH	MIMEOGRAPH
LITHOGRAPH	INDEX BRISTOL
LABEL	POST CARD
OFFSET	COVER
EGGSHELL	CUP AND CONTAINER
MUSIC	FILE FOLDER
POSTER	TAG
BOND	COATED
WRITING	MACHINE COATED

KRAFT CONVERTING AND KRAFT ENVELOPE
KRAFT LINER BOARD

MILLS

Mechanicville, New York
Luke, Maryland
Covington, Virginia
Tyrone, Pennsylvania
Williamsburg, Pennsylvania
Charleston, South Carolina

EXCELSIOR Knox Woolen Co. Camden Me. FELTS & JACKETS

"EXCELSIOR" FELTS

Manufacturers of Felts of Superior Quality for Every Grade of Pulp and Paper

KNOX WOOLEN COMPANY
CAMDEN, MAINE

CLEARING HOUSE

HELP WANTED

MEN WANTED
Positions Open

General superintendent four-machine paper mill, bond, envelope, mimeograph, writing, glassine and grease-proof papers. Also Board mill superintendent.

Superintendent Fourdrinier machine mill on .009 Bogus Kraft, also machine tender for same plant. Chemists and chemical engineer; comptroller.

Maintenance superintendent, and plant engineer, also finishing foreman for Mid-West mill making sulphite bond, writing, ledger, offset and index papers.

We invite correspondence (confidential) with mills seeking executives and with executives seeking new positions.

Charles P. Raymond Service, Inc.
294 Washington St., Boston 8, Mass. M-5

TECHNICAL SPECIALTY SALESMAN

To a young man who has had at least five years selling experience an unusual opportunity is afforded. Applicant's technical education should have been in one of the following fields—chemistry, paper chemistry or organic chemistry. It is essential the man have had at least five years actual selling experience, preferably selling to manufacturers and converters. Address The Munising Paper Co., 135 S. LaSalle Street, Chicago 3, Illinois. M-5

SALARIED POSITIONS $3,500—$35,000

If you are considering a new connection communicate with the undersigned. We offer the original personal employment service (39 years recognized standing and reputation). The procedure, of highest ethical standards, is individualized to your personal requirements and develops overtures without initiative on your part. Your identity covered and present position protected. Send only name and address for details.

R. W. BIXBY, INC.
117 Dun Bldg., Buffalo 2, N. Y.
TF

WANTED
DEVELOPMENT ENGINEER

Graduate engineer for development work on corrugated containers and container testing at large corrugated box plant in Southeast. Several years experience in design, evaluation, and manufacture of corrugated containers required. Box 49-179, care Paper Trade Journal. M-12

HELP WANTED

$7000-8000—ASST. CHIEF ENGINEER—Design development. Paper Mill Machinery.

$3384-4344—LUBRICATION FOREMAN—Minimum 3-5 years experience. Head Millwright or Mechanic. Experience Head Oiler or Lubrication Supervisor highly desirable.

MECHANICAL ENGINEER—Paper Mill experience; Heavy on Drafting.

MECHANICAL or CIVIL ENGINEER—Resident engineer for general construction. Later transferred to paper mill. APPLICATIONS DESIRED from trained pulp and paper mill executives considering new positions.

RICE EMPLOYMENT AGENCY
Radio Center Building
Little Rock, Arkansas M-12

WANTED
PAPER RESEARCH CHEMIST

to supervise group of 6 to 8 men on development of paper products in research laboratory of upper midwest manufacturer of bleached groundwood, sulphite and kraft printing and converting papers. Must be well grounded in paper chemistry and manufacturing processes with development experience in these fields. Prefer man 30 to 40 years old with a good knowledge of book grade bleached papers and enamel grade coated papers. In reply give personal history, training, experience and salary expected.

Address Box 49-52, care Paper Trade Journal. TF

WANTED

Graduate Engineer having several years experience, for midwest pulp and paper mill. In reply give personal history, training, experience, and salary expected. All replies kept strictly confidential. Address Box Number 49-214, Paper Trade Journal. M-5

SUPERINTENDENT for large eastern paper bag plant—long experience—intimate, personal knowledge of paper bag machine mechanics, operation and maintenance essential. Give full details and salary required. Address Box 49-222 care Paper Trade Journal. M-12

EXPERT ADJUSTOR — Printed flat and square bags. Excellent opportunity for right man able to take charge. Write Box 49-224 care Paper Trade Journal. M-26

SITUATIONS WANTED

PERSONNEL MANAGER available. Several years experience in personnel administration. Special experience in labor relations and negotiations. Permanent position desired with progressive concern. Address Box 49-415 care Paper Trade Journal. M-5

PRODUCTION MANAGER or SUPERINTENDENT 30 YEARS PRACTICAL EXPERIENCE high grade folding box board specialties on Cylinders and Fourdriniers. Address Box 49-209 care Paper Trade Journal. M-19

SUPERINTENDENT—Age 39. Desires to make change. 21 years experience on high speed Fourdrinier with Yankee dryer machines making toilet tissue, facial, towel, twisting. Excellent qualifications for handling help. Can supply references. Address Box 49-189 care Paper Trade Journal. M-5

MASTER MECHANIC and Paper Maker. Vast amount of experience installing, operating and maintaining paper mill equipment. Excellent health. References. Address Box 49-188 care Paper Trade Journal. M-5

MECHANICAL ENGINEER—With extensive background in Kraft pulp and paper mills as engineer, superintendent and manager, manufacturing highest grades of pulp and papers, invites correspondence. Best of credentials from present and former associates in regards to integrity and ability. Address Box 49-192 care Paper Trade Journal. M-5

DIRECTOR RESEARCH or Coordinator—College graduate, 20 years experience Research, production, managing. Converting Paper plastic sheeting, synthetic coatings, adhesives. Imagination know how. Initiative, processes. Seeking new responsibilities with well established company in Research Management. Address Box 49-210 care Paper Trade Journal. M-5

FOR SALE

POWER REAM CUTTERS

New 44" National Automatic Clamp Power Cutters, with A.C. motors — carried in stock, ready immediate shipment.

Also specializing in the NEW 57" National Hydraulic—just out. Send for illustrated circular on this wonderful smooth running machine. Not a single gear on it.

THOMAS W. HALL COMPANY, INC.
Stamford, Conn.
(N. Y. Sales Office: 120 West 42nd St.)
Also rebuilt Shearers, Slitters, and Rewinders.

FOR SALE—52" Slitter-Rewinder manufactured by Cannard, Score-cutter. Rebuilt. Ran day and night until recently when it was replaced by larger machine. Exceptional value at $2,500.00. THE PAPERCRAFT CORPORATION, Paper Square, Pittsburgh, Pennsylvania. TF

RATES FOR CLASSIFIED ADVERTISING

HELP WANTED—10c a word. Double rate for heavy face type. Minimum charge $2.50.

SITUATIONS WANTED—10c a word, double rate for heavy face type. Minimum charge $2.50. If repeated ½ rate will be charged for each consecutive repetition.

FOR SALE—10c a word. Double rate for heavy face type. Minimum charge $2.50.

WANTED—10c a word. Double rate for heavy face type. Minimum charge $2.50.

OPPORTUNITIES—10c a word. Double rate for heavy face type. Minimum charge $2.50.

Classified advertising space may also be purchased at $5.00 per single column inch. All classified advertisements are payable in advance. If box number is used—70 cents additional.

Address replies to advertisements appearing under Box Numbers in care of PAPER TRADE JOURNAL, 15 West 47th Street, New York 18, N. Y.

NON-STRIKING, FREE-OPERATING ROTARY AND GATE VALVES

MANUAL OR ELECTRIC OPERATION

Shartle rotary valves are definitely non-freezing free-operating valves.

Built for manual or electric operation, in sizes 4" to 22", with cast-iron body and bronze rotor, all cast-iron, all-bronze, all stainless steel.

Also fast finding favor in the mills is the Shartle gate or slide valve, a rugged but thin and easy-to-install valve that is also non-freezing and easy to operate.

Built for manual or electric operation, in sizes 4" to 22", with cast-iron body and machined brass slide, or of your favorite alloy.

OTHER VALVES ALL TYPES
Address Shartle or Dilts

SHARTLE BROS. MACHINE CO., Middletown, Ohio
DILTS MACHINE WORKS, Fulton, New York

B-C International, London, England • DIVISIONS OF THE BLACK-CLAWSON COMPANY, HAMILTON, OHIO • Western Sales Office: Mayer Bldg., Portland, Oregon • Associate: ALEXANDER FLECK LIMITED, Ottawa, Ont., Canada

FOR SALE

BEATERS
1—Iron tub 84x84 Shartle breaker
1—Bilts high speed with roll 58x48

CUTTERS
1—136" Horne duplex with duplex layboy
1—100" Hamilton duplex with duplex layboy
1— 94" Clark single with layboy
1— 84" Clark single with layboy
1— 70" Clark
1— 48" Hamilton

DRYERS
1—12 ft. x 108" Yankee
1—12 ft. x 138" Yankee
1— 8 ft. x 174" Yankee
1— 8 ft x 174"
4—48 x 118"
2—48 x 106"
1—48 x 80"
10—36 x 65"

FOURDRINIER PARTS
1—Wire 50' x 110" anti friction with 18" suction couch and three nets presses, rolls 20 x 106".
1—106" Fourdrinier Part with 30" suction couch, 20" diameter breast roll, 8" diameter table rolls.

JORDANS
1—No. 2 Appleton, anti friction, with 150 HP motor
1—No. 5 Miami, anti friction
1—No. 2 Dillon
5—Noble & Wood Pony

MOULDS
1—36 x 123"
1—60 x 84"
1—48 x 84"
1—66 x 84"

PAPER MACHINE
1—100" trim combination machine
1—94" trim facial tissue and M G machine with 8" dia. Beloit dryer
1—84" Fourdrinier paper machine

PUMPS
2—12 x 12 Gould triplex
1—10 x 20 Shartle duplex
1— 7 x 10 Gould triplex

SCREENS
2—No. 5 Bird
Flat screens, 3 to 10 plate
Leith Walk and Moore & White rotary

SLITTERS
1—234" Rice Barton
1—150" Moore & White four drum
1—150" Warren two drum
1—139" and one 129" Pusey & Jones two drum
1—112" Kidder
1— 62" Lexington
1— 36" Cameron
1— 17" 64 W Cameron

SUCTION ROLLS
1—30 x 180" Couch
1—22 x 180" Press
1—25 x 160" Couch
1—18 x 148" Couch
1—18 x 92" Couch

ELECTRIC TRUCKS
1—Baker electric truck, model D T O
1—Walker electric highway truck, 4000 lb. Capacity, Model 42 with generator
1—Automatic tractor and plier

FRANK H. DAVIS CO. 175 Richdale Ave., Cambridge, Mass. TF

FOR SALE

1—Triple Effect Zaremba Evaporator, 84" diameter, each effect 1200 sq. ft. of heating surface, 440—1" steel tubes, 2 tilt traps, 2 moisture separators, inter-connecting piping and barometric condenser, traps and 3 liquid level controllers. Vacuum pumps are not included. Available for immediate shipment. May be inspected at any time.

2—#420 Black & Clawson 10" x 16" Triplex Geared Stock Pumps, bronze fitted, belt drive, 30" x 10" pulley.

2—Pusey & Jones Triplex Stock Pumps, 10" diameter cylinder, 20" stroke, 25 revolutions of crank shaft will throw 469 gallons. Pumps driven on jack shaft arrangement, gear and pinion drive.

1—Duo-arrangement comprising Van de Carr patent stock inlet combined with two standard slices of 14" and 8" high standard design with center and end adjustment supports on adjustable side frames. Stock inlet Pusey & Jones design, 30" high, equipped with motor driven direct-connected perforated distributor roll, adjustable device for leveling the sheet, adjustable deckle inplates, gauge glass and necessary supporting frames.

3—Washer Cylinders, 42" diameter x 84" face.

24—Brass Table Rolls, 7" diameter x 196" face, equipped with Timken Roller Bearings #375-372.

Address Box 49-206 care Paper Trade Journal. M-5

FOR SALE

BRAND NEW—HEAT EXCHANGERS—Steel Shell; Bronze Heads; Copper Nickel Tube Sheets and Tubes

4—"ROSS" Size 1024—Type BCP—Single Pass—51 Sq. Ft. Heat Transfer Surface. Price:—$100.00 each

10—"PATTERSON-KELLEY" Single Pass 344 Sq. Ft. Heat Transfer Surface. Price:—$500.00 each

Full details furnished upon request.

J. A. DOUGHERTY—
P. O. Box 90,
BALA-CYNWYD, PA. M-5

For Sale—Westinghouse steam turbine serial #15079, 125 HP, 150 PSIG, 10# back-pressure, speeds 5150 to 736 RPM or 5150 to 320 RPM. Turbine in excellent condition. 1 Nash Hytor vacuum pump, size H-4 Test No. 1612, directly connected to Westinghouse motor, 10 HP, 1750 RPM, 220-440 V, 60 cycle, 3 phase. Pump very new. 1 set primary presses consisting of 3 rubber and 3 steel rolls, rolls 14" diameter, 138" face, 149" shoulders, journals 12" long, 3 11/16" diameter, all complete with frames and bearings. Rolls can be cut down if desirable. Address Box 49-212 care Paper Trade Journal. M-20

FOR SALE

1—36-2 S. W. Refiner #8289 with Peripherial Control Mechanism & 400 HP 1200 RPM 3 P 60 C 440 volt motor.

1—Screw Feeder for 36-2 mill with high speed drive and ¾ HP 3 P 60 C 440 volt motor per 0-13947.

Address Box 49-221, care Paper Trade Journal. M-12

CORE PIPE

3" and 4" New Steel Pipe cut to length and slotted per specification.

ALTOONA PIPE & STEEL SUPPLY CO.
Altoona, Pennsylvania
Phone 6151 M-5

FOR SALE

44" & 65" Paper Power Cutters, like new; Casters; Wasters; Sheeters; Die Cutters; Printers; Slitters & Rewinders. Write for Price Bulletin #155 listing over 70 Paper Converting Machines. Priced exceptionally low.

South Wabash Engineering Co. Inc.
2937 S. Wabash
Chicago, Ill. TF

FOR SALE

A 26" Five-Color Roto-Gravure Press in excellent condition at a genuine bargain price complete with drive, extra parts and special tools. For complete information, write in care of Paper Trade Journal. J-9

FOR SALE

Small Paper Mill-Cylinder Machine. Situated advantageously to sources of raw material and sales outlet. Terms. Address Box 49-413 care Paper Trade Journal. M-12

REBUILT ELECTRICAL MACHINERY

A.C. & D.C. GENERATORS

1000 amp. 60 volt Westgh. SK Welding Gen.
1—150 KW West. SK 125 v. 1200 RPM.
125 KVA 220/3/60 277 RPM West.
150 KW Triumph 250 v. cp.wd. 600 RPM.
150 KW G.E. 550 v. 1100 RPM cp.wd.
1500 amp. 60 v. West. SK Generator

M-G SETS—R. CO.

100 KW West. 250 v.—150 HP Syn. 220/440
450 KW G.E. 275 v.—710 HP Syn. 2300 v.
250 KW West. SK 250 v.—2300 v. Syn.
150 KW West. 125 v. SK—150 HP Ind.
50 KW 125 v. G.E.—75 HP G.E. 2200 v.
35 KW G.E. 125 v.—50 HP G.E.
10 KW 125 v.—15 HP Master 220/440.

AIR COMPRESSORS

755 CFM Chic. Pneu. two stage Belted.
355 cfm 100# Chic. Pneu. 12 x 10 Belted.
270 cfm 100# Chg. Pne. Gas. Portable.
245 cu. ft. Ing. Rand belted ERI
220 cfm 100# Ing. Rd. Gas. Portable.
1—164 cu. ft. Ch. Pneu. Steam Type.

AC MOTORS (3 ph. 60 cy.)

HP	Make	Wdg	Spd.	Type
500	Elect. Mery.	Syn.	120	
300	G.E.	S.R.	450	I M
300	West.	S.R.	900	CW
250	Al.Ch.	S.R.	435	
100	G.E.	S.C.	600	IK
150	G.E.	Syn.	600	ATI
150	G.E.	S.C.	695	KT562Y
125	West.	Syn.	277	
120	Cr. Wh.	S.R.	290	
100	G.E.	S.R.	450	I M
100	Al.Ch.	S.R.	580	
75	West.	S.C.	865	MS
60	West.	S.C.	1150	CS505
50	A.C.	S.C.	1750	
40	G.E.	S.C.	860	KT
35	G.E.	S.C.	1150	I K
30	Vert. G.E.	S.C.	1150	KT526
30	G.E.	S.C.	1200	KG 405
25	C.Wh.	S.C.	900	SC504
25	500 v. West.	S.C.	1750	CS365
25	Cr.Wh.	S.C.	865	
25	Cr.Wh.	S.R.	580	1210
15	West	S.C.	1750	CS326
15	L.A.	S.C.	3600	Fr. 324

HP	Make	Wdg	Spd.	Type
10	West.	S.C.	570	CS566C
10	West.	S.C.	870	CS464C
10(6)	West.	S.C.	1200	CS370C
7½	Comm.	S.C.	865	P326
7½	West.	S.C.	3440	CS254Y
5	West.	S.C.	585	CS546
5	West.	S.C.	1750	254
5(2)	West.	S.C.	1200	CS
5/11½	L.A.	S.C.	500/1600	2558
5	Master	S.C.	1125/37	PA
5	Burke	S.C.	420	EM2
3	West.	S.C.	1100	CS
3	West.	S.C.	1750	
2	West.	S.C.	600/1200	CS324
2	550v. West.	S.C.	1750	CS224
2	Imp.	S.C.	480	

AC MAGNETIC STARTERS (3 ph. 60 cy.)

2—700 HP West. 2300 v. Syn. Line Starters.

MONORAIL HOISTS

2—½ Ton Conco 220/3/60
1—1½ Ton Reading 220/3/60
1—2 Ton Link Belt 220/3/60

MOORHEAD ELECTRICAL MACHINERY CO. **Pittsburgh 19, Pa. • Mayflower 7900**

FOR SALE

CHESTNUT WET LAP FOR SALE

8 Air Dry Tons per day of pure chestnut wet lap available for immediate shipment. Write for details and sample.

CHAS. A. SCHIEREN COMPANY
Bristol, Va. M-5

FOR SALE—62" Beloit Combination 4 Ply Board Paster and 2 Ply Paper Lining Machine. Now running. Address Box 49-180 care Paper Trade Journal. TF

FOR SALE—1—84" Horn Duplex Sheeter with Hamblet Layboy and 10 roll backstand. Immediately available. $2500.00. Act fast. Address Box 49-223 care Paper Trade Journal. M-5

FOR SALE

PAPER COATING MACHINERY MANUFACTURERS — Waxing, Oiling, Carbon, Laboratory Coating and Treating Machines. New improvement. MAYER MACHINE COMPANY, Inc., 1313 Buffalo Road, Rochester 11, N. Y. TF

FOR SALE—2 Ply Laminator—Combines any combination of Paper and Board—50" wide; Rewinds up to 60" diameter rolls. Can be seen running. Priced right. Address Box 49-181 care Paper Trade Journal. TF

FOR SALE—One Mamco Overlapping delivery system including Reeves Drive. Equipment new and unused. Write or wire Crown Zellerbach Corporation, Portland, 4, Oregon. M-5

WANTED

WANTED SECOND-HAND
1—Calender roll about 12" x 61" face
1—6 plate Screen
1—8 plate Screen
1—36" x 72" Cylinder Mould
1—36" x 48" Cylinder Mould
1—42" Revolving Knife Cutter
Give make, condition and location for inspection, as well as best price.
Address Box 49-205, care Paper Trade Journal M-5

WANTED
COMPLETE CYLINDER MACHINE
TO TRIM APPROXIMATELY
90 INCHES BOARD.
Principals only.
Address Box 49-167, care Paper Trade Journal, M-5

FOR SALE

1—102" Cameron Type 18—60" diameter rewind capacity.

BARKERS
1—5' Carthage Disc Barker

BEATERS
1—800 lb. Beater—iron tub.

BRASS FELT ROLLS
9—4" diameter x 140" face (with bearings).

BREAST ROLLS
1—100" x 14".
8—114" x 14".
1—120" x 14"

CALENDER STACK
1—72" 5 roll Calendar Stack.

CRUSHERS
1—18" x 18" Jeffrey Single Roll Crusher

CYLINDER MOULDS
1—36" diameter x 80" face.
1—39" diameter x 72" face.
1—36" diameter x 79" face.

DECKER
1—Decker—48" diameter x 84" cylinder mold

DRIVES
2—#4 Reeves Drives.
1—#2 Reeves Drive.
1—Smith & Winchester mortise gear Drive.
1—Foote—7½ h.p. Speed Reducer (Ratio 240 to 1)
2—Smith & Winchester Mortise Gear Drives with 26" diameter clutches—Ratio 8 to 1.

DRIVES (Angle)
1—General Machine Company 16 : 1.
1—Philadelphia 50:1 — 1 h.p. — 1200 r.p.m.
2—Philadelphia 21½:1 — 3 h.p. — 1200 r.p.m.

V-BELT DRIVE
1—83½" diameter x 7½" face, 3 groove
1—36½" diameter x 7¾" face, 3 groove (With clutch).

DRYERS
50—42" diameter x 126" face.
9—36" diameter x 76" face.
1—48" diameter x 91" face
1—48" diameter x 94" face
8—25" x 120" (Baby Dryers)
2—36" x 143".
1—24" x 130".

FLAT SCREENS
1—6 plate Shartle Flat Screen.
1—8 plate Packer Type Flat Screen.
2—12 Plate Murray Dunbar Flat Screens.
2—14 plate Sandy Hill. (Never used.)

HYDRAULIC PRESS
1—Watson-Stillman Co. (Platen 24" x 24").

JORDANS
1—Noble & Wood. Pony Monarch Belt Driven.
2—Noble and Wood—Mammoth Type
1—Emerson Jordan—25 to 30 tons capacity—iron plug (including new spare iron plug.

MISCELLANEOUS
1—Caustic Mixer.

MOTORS
2—5 h.p. ball bearing—splash proof motors—3/60/440. 1160 r.p.m.
1—½ h.p. ball bearing—splash proof gearhead motor—3/60/440. 1725 r.p.m.
1—2 h.p. ball bearing—splash proof gearhead motor—3/60/440. 1725 r.p.m.

PRESS ROLLS
Various sizes.

PULLEYS
Various cone and assorted pulleys.

PULP STACKER
1—Link Belt Company Pulp Stacker, 30 ft. conveyor, 2½ ft. wide, self propelled, with motors.

PULPER
1—Jones Pulper. Complete with motor and drive.

PUMPS
2—Weil Pump Co.—100 g.p.m.—100 P.S.I. including 15 h.p. motors (new equipment).
1—Bell & Gossett—300 g.p.m.—120' head—including 15 h.p. motor.
1—Goulds Sump Pump—50 g.p.m.—20' head—including motor.
Various sizes of Centrifugal and Plunger Pumps. Write us regarding your particular requirements.

REEL
1—72" Beloit Reel.

ROLLS
500—Brass tube-steel tube—rubber covered iron rolls—various sizes.

SAVEALL
1—Pusey & Jones Saveall. Cylinder mold 42 x 146, anti friction bearings, including rubber covered couch roll.
1—#5 Bird Saveall.

SCREEN PLATES
20 Plates cut .016.
10 Plates cut .008.
Also other sizes and cuts in stock

SHEETER
1—136" Moore & White Sheeter, duplex, with layboy.

SLITTERS AND WINDERS
1—208" Cameron—Type 20.
1—84" Cameron—Type 18.
1—102" Cameron—Type 18.
1—72" Cameron—Type 28-8-7 D (shear cut)
1—82" Cameron—Type 10-10-AJ.
1—80" Cameron—Type 24-2L.
1—42" Cameron—Type 40-4-B.
1—42" Cameron—Type 28-8-7 (shear cut).
1—42" Cameron—Type 24-2A.
1—42" Cameron—Type 9-5.
1—42" Cameron Constant Tension and pneumatic control.
1—30" Langston.

SQUEEZE ROLLS
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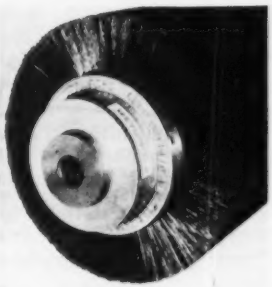

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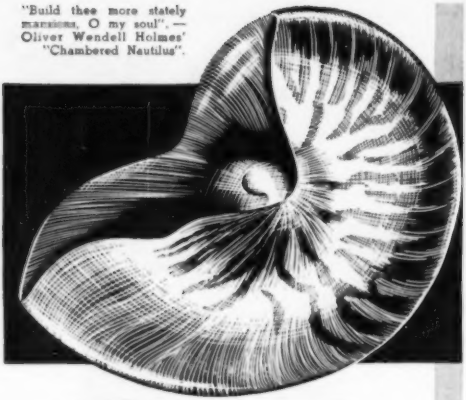

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Link Belt Company
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D. J. Murray Mfg. Co.
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General Electric Co.
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Minneapolis-Honeywell Regulator Co.
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Bauer Brothers Co.
N. P. Bowsher
The Bristol Company
The Brown Instrument Co.
Cochrane Corp.
The Foxboro Company
General Electric Company
W. & L. E. Gurley
Leeds & Northrup Company
National Technical Laboratories
B. F. Perkins & Son
Taylor Instrument Cos.
Testing Machines, Inc.
Williams Apparatus Co., Inc.

Joints
Johnson Corp.
Perfecting Service Corp.

Jordan Fillings
Appleton Machine Co.
Bahr Brothers Mfg. Co.
E. D. Jones & Sons Co.
Shartle Brothers Machine Co.
Smith & Winchester Mfg. Co.
Valley Iron Works Co.

Knives
Black-Clawson Company
Dilts Machine Works, Inc.
Hamblet Machine Co.
Heppenstall Company
E. D. Jones & Sons Co.
The Moore & White Co.
Taylor Stiles & Co.
Valley Iron Works Co.

Knot Boring Machines
DeZurik Shower Company

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Timber Engrg. Co.

Laboratory Equipment
William Allen Son's Company
Appleton Machine Co.
Bauer Brothers Co.
The Biggs Boiler Works Co.
Bird Machine Company
Dilts Machine Works
W. & L. E. Gurley
E. D. Jones & Sons Co.
Leeds & Northrup Company
National Technical Laboratories
Taylor Instrument Companies
Testing Machines, Inc.
Valley Iron Works Co.

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Gibbs-Brower Company, Inc.
Hamblet Machine Co.
Moore & White Co.
Suburban Machine Co.

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Sinclair Refining Co.
Socony-Vacuum Oil Co.
Sun Oil Company
The Texas Company
Tide Water Associated Oil Co.

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Cleveland Crane & Engrg. Co.
Frank G. Hough Co.
The Wellman Engrg. Co.

Micrometers & Calipers
Farrel-Birmingham Co.
Montague Machine Co.
Lobdell Co.
Testing Machines, Inc.
Walker-Goulard-Plehn Co.

Moisture Content Control
Askania Regulator Company
Midwest-Fulton Machine Co.
Stickle Steam Specialties Co.

Motors and Generators
Allis-Chalmers Mfg. Co.
Chicago Electric Company
Fairbanks, Morse & Co.
General Electric Company
Ingersoll-Rand Co.
Reliance Electric & Engrg. Co.

Nickel and Nickel Alloys
The International Nickel Co.

Nozzles
Link Belt Company

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The Moore & White Co.
Perfecting Service Corp.
Shartle Brothers Machine Co.

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Black-Clawson Company
Downingtown Mfg. Co.
Gibbs-Brower Company, Inc
Thomas W. Hall Co.
Lukenweld
Moore & White Co.
Pusey & Jones Corp.
J. J. Ross Company
Ross Paper Machy. Corp.
The Sandy Hill Iron & Brass Works
Shartle Brothers Machine Co.
Smith & Winchester Mfg. Co.

Paper Machine Slices
Black-Clawson Company
E. D. Jones & Sons Co.
The Moore & White Co.
The Sandy Hill Iron & Brass Works
Valley Iron Works Co.

Paper Tube Machinery
Dietz Machine Works
Gibbs-Brower Company, Inc.
Thomas W. Hall Co.
Hudson Sharp Machine Co.
Langston Co., Samuel M.
Suburban Machine Co.

Pasting Machines
Black-Clawson Company
Davis, Frank H., Co.
Dilts Machine Wks.
Frank W. Egan & Co.
Gibbs-Brower Company, Inc.
Murray, D. J., Mfg. Co.
Moore & White Co.
Potdevin Machine Co.
Shartle Brothers Machine Co.
Waldron Corp., John

Penstocks
The Biggs Boiler Works Co.

Perforated Metal
Allis-Chalmers Mfg. Co.

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American Cast Iron Pipe Co.
Armco Drainage & Metal Products, Inc.
Babcock & Wilcox Co.
Crane Company
Ladish Company
Michigan Pipe Co.
Michigan Steel Casting Co.
National Tube Co.
Walworth Company
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The American Rolling Mill Co.
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Walworth Co.

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General Dyestuff Corp.
Monsanto Chemical Company
Rohm & Haas Co.

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Perkins & Son, Inc., B. F.

Plates
Armco Steel Corp.
Babcock & Wilcox Co.
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J. O. Ross Engrg. Corp.
Lukenweld
Lukens Steel Company
Timken Roller Bearing Co.

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Black-Clawson Company
E. D. Jones & Sons Co.
Shartle Brothers Machine Co.

Precision Sample Cutter
Testing Machines, Inc.

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General Dyestuff Corp.

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William Allen Son's Company
Babcock & Wilcox Co.
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Foster Wheeler Corp.
The Midvale Company

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Potdevin Machine Co.
Shartle Brothers Machine Co.
Valley Iron Works Co.
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H. G. Weber & Co., Inc.
Williams Apparatus Co.

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The Bauer Bros. Co.

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Crane Company
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Shartle Bros. Mach. Co.

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Midwest-Fulton Machine Co.
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Shartle Brothers Machine Co.
Sutherland Refiner Corp.
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DeZurik Shower Company
The Foxboro Company
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Johnson Corp.
Leeds & Northrup Company
Midwest-Fulton Machine Co.
Minneapolis-Honeywell Regulator Co.
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Paper and Industrial Appliances
Shartle Brothers
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The Dow Chemical Company
The Goodyear Tire & Rubber Company
Hercules Powder Co.
Monsanto Chemical Company
Rohm & Haas Co., Resinous Products Div.

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Appleton Machine Co.
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Downingtown Mfg. Co.
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Rodney Hunt Machine Co.
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Shartle Brothers Machine Co.
Smith & Winchester Mfg. Co.
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Waldron Corp., John
The Youngstown Welding & Engrg. Co.

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The Goodyear Tire & Rubber Company
Stowe-Woodward, Inc.

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Moore & White Co.
Potdevin Machine Co.
John Waldron Corp.
H. G. Weber & Co., Inc.

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The Moore & White Co.

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The Biggs Boiler Works Co.

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The Moore & White Co.
Perfecting Service Corp.

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The Goodyear Tire & Rubber Company

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American Anode Div., The B. F. Goodrich Chem. Co.

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Moore & White Co.
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Potdevin Machine Co.
Shartle Brothers Machine Co.
Waldron Corp., John
Weber, Herman G.

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Bird Machine Company
Hardinge Company

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Merrick Scale Mfg. Co.
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Walker-Goulard-Plehn Co.

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Fitchburg Screen Plate Co.
Magnus Metal Corp.
Morey Paper Mill Supply Co.
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Appleton Machine Company
Bird Machine Company
Carthage Machine Co.
Dilts Machine Works, Inc.
Downingtown Mfg. Co.
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Link Belt Company
Moore & White Co.
D. J. Murray Mfg. Co.
J. J. Ross Company
Ross Paper Machy. Co.
The Sandy Hill Iron & Brass Works
Shartle Brothers Machine Co.
Valley Iron Works Co.

Sheet Machines
Gibbs-Brower Company, Inc.
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Suburban Machine Co.
Valley Iron Works Co.

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Bird Machine Company
DeZurik Shower Company
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Carthage Machine Co.
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Black-Clawson Company
The Dow Chemical Company
du Pont, E. I., de Nemours & Co.
Glidden Company
Hercules Powder Co.
Monsanto Chemical Company
National Aluminate Corp.
Philadelphia Quartz Co.
Stein-Hall Co., Inc.

Sizing Tester
W. & L. E. Gurley

Slime Control
W. A. Cleary Corp.
The Dow Chemical Company
E. I. du Pont de Nemours & Co.
General Dyestuff Corp.
National Aluminate Corp.
Rohm & Haas Co.

Slitters
Black-Clawson Company
Cameron Machine Co.
Carthage Machine Co.
Dietz Machine Works
Downingtown Mfg. Co.
Frank W. Egan & Co.
Gibbs-Brower Company, Inc.
Thomas W. Hall Co., Inc.
Hamblet Machine Co.
Hudson Sharp Machine Co.
Langston Co., Samuel M.
Machinery & Prod. Engrg. Corp.
Moore & White Co.
D. J. Murray Mfg. Co.
Potdevin Machine Co.
J. J. Ross Company
Ross Paper Machy. Co.
The Sandy Hill Iron & Brass Works
Smith & Winchester Mfg. Co.
Suburban Machine Co.
Valley Iron Works Co.
Waldron Corp., John

Smoke Stacks
William Allen Son's Company
The Biggs Boiler Works Co.

Splicing Tissue
Williams-Gray Co.

Softness-Stiffness Tester
W. & L. E. Gurley
Testing Machines, Inc.

Soluble Oils
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American Cyanamid Company, Industrial Chemicals Division
General Dyestuff Corp.
Nopco Chemical Co.

Solvents
Adell Chemical Company

Stainless Steel
American Cast Iron Pipe Co.
Armco Steel Corp.
Ingersoll Steel Div., Borg-Warner Corp.
Michigan Steel Casting Co.
The Midvale Company
U. S. Steel Corp.

Starch
American Cyanamid Company, Industrial Chemicals Division
A. M. Meincke & Son, Inc.
Clinton Industries, Inc.
National Starch Products Inc.
Stein-Hall Co., Inc.

Steam Joints
The Moore & White Co.

Steam Specialties
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Cochrane Corp.
Combustion Engrg. Co., Inc.
Johnson Corp.
Midwest-Fulton Machine Co.
Perfecting Service Corp.
Shartle Bros. Mch. Co.
Stickle Steam Specialties Co.

Steel
Allegheny Ludlum Steel Corp.
Armco Steel Corp.
Carnegie Illinois Steel Co.
Ingersoll Steel Div., Borg-Warner Corp.
Lukens Steel Company
Midvale Company
D. J. Murray Mfg. Co.
The Sandy Hill Iron & Brass Works
U. S. Steel Corp.

Steel, Clad
Babcock & Wilcox Co.
Lukens Steel Company

Steel Tanks
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The Biggs Boiler Works Co.

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The Stanley Works

Stuff Chests
Downingtown Mfg. Co.
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Midwest-Fulton Machine Co.
Moore & White Co.
Shartle Brothers Machine Co.
Valley Iron Works Co.

Suction Boxes
Black-Clawson Company
Downingtown Mfg. Co.
E. D. Jones & Sons Co.
Moore & White Co.
The Sandy Hill Iron & Brass Works
Shartle Brothers Machine Co.

Suction Unit
Paper & Industrial Appliances, Inc.

Sulphur
American Cyanamid Company, Industrial Chemicals Division
Texas Gulf Sulphur Co.
Witco Chemical Company

Sulphur Burners
Valley Iron Works Co.

Sulphur Dioxide
American Cyanamid Co., Calco Chemical Div.
Ansul Chemical Company
Virginia Smelting Co.

Supercalenders
The Appleton Machine Co.
B. F. Perkins & Son, Inc.

Synthetic Latices
American Anode Div., The B. F. Goodrich Chem. Co.
The Goodyear Tire & Rubber Company
Nopco Chemical Co.

Tachometers
The Brown Instrument Co.

Talc
American Cyanamid Company, Industrial Chemicals Division
W. H. Loomis Talc Corp.

Tanks
William Allen Son's Company

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E. D. Jones & Sons Co.
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The Noble & Wood Machine Co.
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J. O. Ross Engrg. Corp.
Shartle Brothers Machine Co.
Waldron Corp., John

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Testing Machines, Inc.

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Testing Machines, Inc.

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Carthage Machine Co.
Dilts Machine Works
Dorr Co.
Downingtown Mfg. Co.
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Moore & White Co.
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Oliver United Filters, Inc.
J. J. Ross Company
Ross Paper Machy. Corp.
The Sandy Hill Iron & Brass Wks.
Shartle Brothers Machine Co.
Valley Iron Works Co.

Timber Roof Truss Designs
Timber Engrg. Co.

Titanium
American Cyanamid Co., Calco Chemical Div.
E. I. du Pont de Nemours & Co.
Titanium Pigment Co.
R. T. Vanderbilt Co.
Witco Chemical Company

Tools
Ingersoll-Rand Co.
The Stanley Works
Walworth Company

Tractor Shovels
Frank G. Hough Co.

Tractors & Trucks
Frank G. Hough Co.
Towmotor Corp.
Clark Equipt. Co., Clark Tractor Div.

Transmissions
Link Belt Company

Traps
Armstrong Machine Works
Cochrane Corp.
Crane Co.
Johnson Corporation
Shartle Bros. Mch. Co.
Stickle Steam Specialties Co.

Tubes
Babcock & Wilcox Co.
National Tube Co.

Tubing, Mechanical
National Tube Co.

Tubs
Rodney Hunt Machine Co.
Shartle Brothers
Valley Iron Works Co.

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De Laval Steam Turbine Co.
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Hunt, Rodney, Mach. Co.

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Foster Wheeler Corp.

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J. J. Ross Company
Ross Paper Machy. Corp.
Shartle Brothers Machine Co.
Suburban Machine Co.

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The Bristol Company
The Brown Instrument Co.
Cochrane Corp.
Crane Company
Dilts Machine Works
The Foxboro Company
E. D. Jones & Sons Co.
Magnus Metal Corp.
D. J. Murray Mfg. Co.
William Powell Co.
Record Fdy. & Mch. Co.
The Sandy Hill Iron & Brass Wks.
Shartle Brothers Machine Co.
Stickle Steam Specialties Co.
Taylor Instrument Companies
Trimbey Mach. Wks.
Valley Iron Works Co.
Walworth Company

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Bird Machine Company
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Moore & White Co.
Oliver United Filters
The Sandy Hill Iron & Brass Wks.
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Shartle Brothers Machine Co.
Valley Iron Works Co.

Waste Treating Equipment
Alhydro, Inc.
The Dorr Company

Water Conditioning
Alhydro, Inc.
Calgon, Inc.
Cochrane Corp.
General Dyestuff Corp.
National Aluminate Corp.

Water Dispersions
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American Anode, Inc.
Rohm & Haas Co., Resinous Products Div.

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Hercules Powder Co.

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Dilts Machine Works
Frank W. Egan & Co.
Gibbs-Brower Company, Inc.
The Mayer Machine Co.
Potdevin Machine Co.
Shartle Brothers Machine Co.
Waldron Corp., John
Weber, Herman G.

Welding Equipment
General Electric Company
Walworth Company

Wet Machines
Black-Clawson Co.
Carthage Machine Co.
Downingtown Mfg. Co.
Gibbs-Brower Company, Inc.
Moore & White Co.
Pusey & Jones Company
J. J. Ross Company
Ross Paper Machy. Corp.
The Sandy Hill Iron & Brass Works
Shartle Brothers Machine Co.
Smith & Winchester Mfg. Co.
Valley Iron Works Co.

Wetting Agents
American Cyanamid Company, Industrial Chemicals Division
Adell Chemical Company
General Dyestuff Corp.
Hercules Powder Co.
Monsanto Chemical Company
Nopco Chemical Co.
Rohm & Haas Co.
Wyandotte Chemicals Corp.

White Water Heaters, self cleaning type
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Winders and Rewinders
The Appleton Machine Co.
Black-Clawson Company
Cameron Machine Co.
Dietz Machine Works
Downingtown Mfg. Co.
Frank W. Egan & Co.
Gibbs-Brower Company, Inc.
Thomas W. Hall Co.
Hudson-Sharp Mach. Co.
Langston Co., Samuel M.
Machinery & Prod. Engrg. Corp.
Moore & White Co.
Paper Converting Mch. Co.
Potdevin Machine Co.
Pusey & Jones Corp.
J. J. Ross Company
Ross Paper Machy. Corp.
The Sandy Hill Iron & Brass Works
Smith & Winchester Mfg. Co.
Suburban Machine Co.
Waldron Corp., John

Wire Brushes
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Bulkley, Dunton Pulp Co., Inc.
International Wire Works
Lindsay Wire Weaving Co.
Williams-Gray Co.

Wire Brushes
Williams-Gray Co.

Wood Splitters
The Appleton Machine Co.
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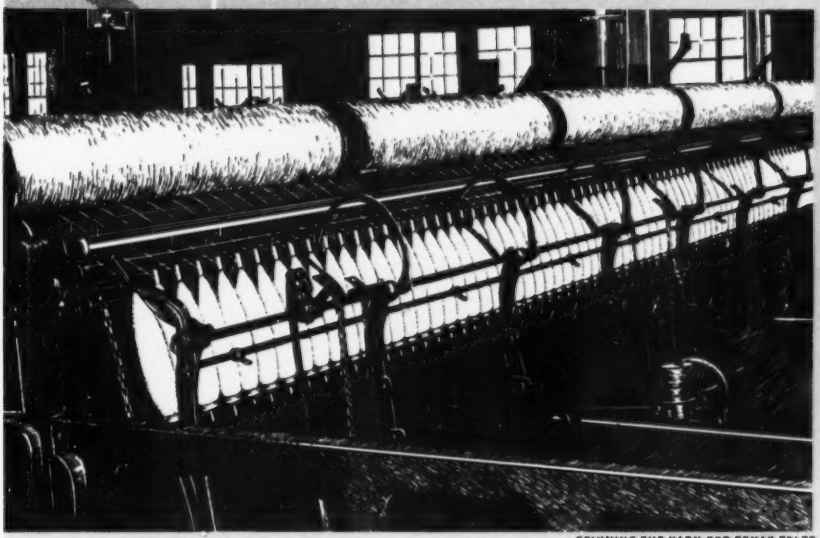

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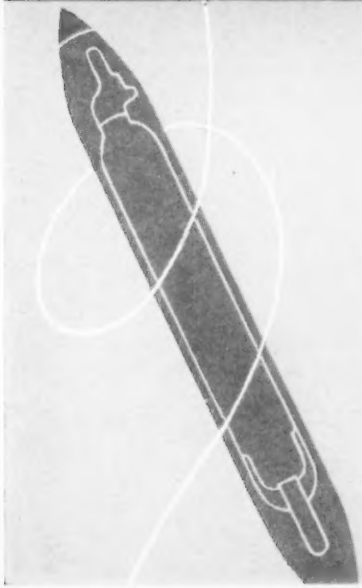

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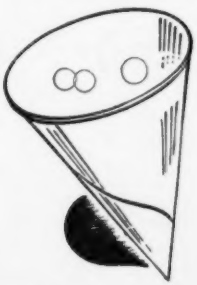

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